THE WORKSTATION NEWSWEEKLY

MacWEEK™

$3.50

28 | Volume 1 | Nov. 17, 1987

INSIDE

Macs and masterpieces
Redesigning directions in the Louvre
Page 18

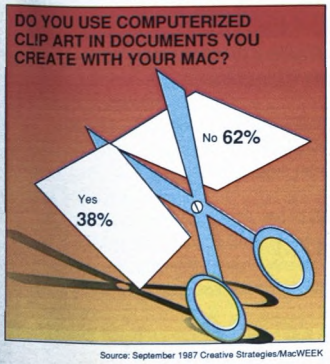
Window On
Printers, statistics
Page 28

Reviews
Scanners, Acta
Page 36

"You have to think of the Mac as a tool with unique characteristics, a tool for abstraction and communication."

The language of pharaohs
Cleo Huggins is designing a font of ancient Egyptian hieroglyphics for the Mac
Page 22

ZOOM IN



Source: September 1987 Creative Strategies/MacWEEK

Mac will support IBM LU6.2 protocol

BY JON SWARTZ
MacWEEK Staff

BERKELEY, Calif. — A team of Apple engineers is modifying software that will let the Macintosh support IBM's peer-to-peer Systems Network Architecture (SNA) for corporate networks.

The program, licensed from Orion Network Systems of Berkeley, Calif., in 1985, lets the Mac support the SNA protocols LU6.2 and PU2.1. These IBM protocols permit workstations to operate on a network as peers with the host, rather than as slaves to a mainframe master.

Apple plans to resell the software, originally called sna62, in the first quarter of 1988, said Orion President Paul Rampel.

An Apple spokeswoman said company policy prohibited comment on unreleased products.

At the Seybold Desktop Publishing Conference in Santa Clara, Calif., in September, Jean-Louis Gassee, Apple senior vice president of research and development, said Apple was interested in developing LU6.2 products.

IBM's LU6.2 (logical unit) and PU2.1 (physical unit) protocols have been used by only a few users nationwide, but have sparked a great deal of interest, according to industry observers.

The program is important in Apple's plan to establish greater corporate use of the Mac because IBM intends to make LU6.2 and

See APPLE, Page 14

Silicon Beach to offer Digital Darkroom

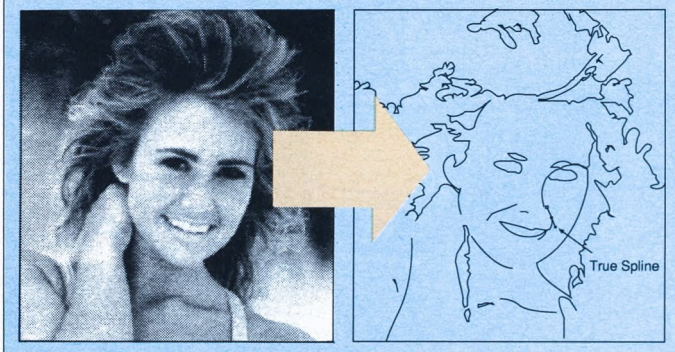
BY ELINOR CRAIG and DANIEL RUBY
MacWEEK Staff

SAN DIEGO — The emerging market for gray-scale image-processing software will gain a new entrant early next year when Silicon Beach Software introduces Digital Darkroom.

The program will offer many of the same capabilities as Image Studio from Letraset U.S.A. of Paramus, N.J. — with one significant addition. It can be used to convert bit-mapped raster images, such as those generated by paint programs, into vectorized objects in draw and illustration programs.

"This program will make gray-scale usable

See DARKROOM, Page 14



Digital Darkroom not only allows manipulation of halftones, as shown at left, but with the Trace Object command, it will translate bit-mapped elements of the halftone into polygons and splines and save it as an Adobe Illustrator file, as shown at right.

Integrated software due for A/UX

BY RUSTY WESTON
MacWEEK Staff

LENEXA, Kan. — Apple's push to make its new A/UX operating environment rich with business applications may be given a boost in January with new products by Innovative Software Inc., the maker of PC SmartWare.

"We're going to be at Mac Expo in January exhibiting something that will give everyone a taste of what's coming," said Paul Bruski, a spokesman for Innovative of Lenexa, Kan.

See SMART, Page 14

PerfecTEK hopes to beat AST with SE DOS coprocessor

BY CLAIR WHITMER
MacWEEK Staff

MILPITAS, Calif. — Jumping the gun on the competition from AST Research, newcomer PerfecTEK Corp. recently announced its MS-DOS coprocessor card for the Macintosh SE.

The company is waiting for the Federal Communications Commissions to approve the board before shipment begins.

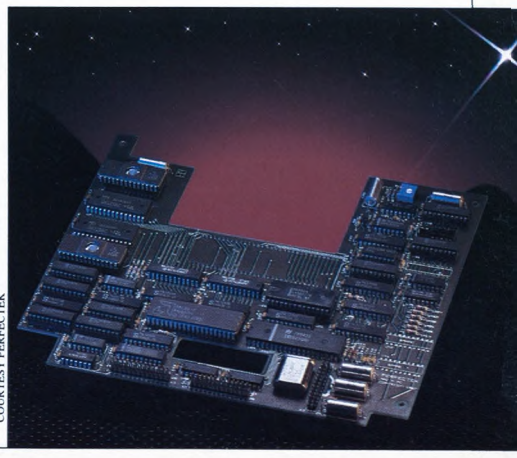
Called the Mac+PC SE, the board should be available before the end of the year, according to Nary Nathan, chief technical officer for PerfecTEK and one of the company's founders.

AST's coprocessor for the SE, the Mac86, is scheduled to start shipping in the first quarter of 1988.

The Mac+PC SE board uses an Intel 8086 microprocessor, includes 512 Kbytes of RAM and plugs into the SE's single slot. The package includes MS-DOS as well as a proprietary file transfer and disk conversion utility.

Mac+PC SE is packaged with a cable that allows direct data transfer from a PC, which can then be converted to 3.5-inch disk format. The board is priced at

See PERFECTEK, Page 14



COURTESY PERFECTEK

PerfecTEK's MS-DOS coprocessor board for the Mac SE uses similar technology as its Mac Plus DOS board.

NODE WARRIORS.

TOPS
All software required to transform a TOPS Network station.
Sun Version
TOPS
All software required to transform an IBM or c computer into a TOPS Network station.
DOS Version
TOPS
All software required to transform a Macintosh into a TOPS Network station.
Mac Version
TOPS
A Sun Microsystems Co.

For many people, using their Local Area Network is like a journey across 500 miles of bad desert, with strange, unforeseen forces of destruction lurking behind every turn.

Until now that is.

Because now there's TOPS, a revolutionary departure in LAN design. TOPS fully arms each node with local user control of information, and frees you from the grips of costly central file servers—and even more costly network administration personnel.

TOPS' unique design gives users completely transparent access to files anywhere from any operating system on any computer—anywhere in the network. And TOPS' modular design supports new operating systems as they become available. Users become believers, because TOPS is so easy to operate. All its commands are totally intuitive.

TOPS is also easy to install and support, and there's no downtime necessary when adding new users. You just plug them in. And because there's no central file server you avoid data crashes and bottlenecks. Your LAN will be stronger than ever, and faster too, because users communicate directly with each other.

Reinforcements!

TOPS Version 2.0 does everything the original does, then adds a few extras all its own. Like automatic publishing and mounting of folders and volumes. Access to locally attached PC printers by other networked PC users. Compatibility with Apple Filing Protocol, and FlashTalk™ speed (it's three times faster than AppleTalk in PC to PC communications). Translation of PC files to Mac format and vice versa. And a lot more.

And price? No need to worry, because it won't put you into deficit spending. TOPS is just $189 per node for Macintoshes and PCs.

So call 800-222-TOPS (US), 800-445-TOPS (CA), for a free Node Warrior button and more information. It'll tip the balance of power in your direction.

TOPS®

A Sun Microsystems Company

2560 Ninth Street, Berkeley, CA 94710

Registered trademark: TOPS, Sun Microsystems, Inc.
Trademarks: FlashTalk, Sun Microsystems, Inc.; AppleTalk, Macintosh, Apple Computer, Inc.

CONTENTS

NEWS

HyperCard clan gathers to look at multimedia future 06
Vendors hot to develop 68030 strategies 09
Users share enthusiasm for 3+Mac 11

WORKSTATION WEEK
3-D animation package ported to Tektronix 4330 15

BUSINESS WATCH

Software-only retailers snare growing share of market 16
Macs join NASA's space station effort 17

FEATURES

Of Macs and the Louvre's masterpieces 18

PEOPLE
Roger Black: Not just another pretty typeface 22
Cleo Huggins helps Mac speak in hieroglyphics 22

EDITORIAL/OPINION

Now is not the time to cut back on computers 24
Letters 24
Steve Rosenthal: Visible results 24
Lawrence Magid: The long view 25
Mac the Knife 50

PRODUCTS

WINDOW ON
Printers: Options for the Mac expand beyond PostScript 28
Statistics: Sampling the mean 32

REVIEWS
Scanners: DEST's PC Scan Plus and AST's TurboScan 36
Get more from an outliner with Acta 43

MultiFinder support for Microphone, Smartcom

BY EMILY BROWER
MacWEEK Staff

Telecommunications software developers Software Ventures and Hayes Microcomputer Products Inc. are rushing to market with new versions of their programs that support MultiFinder's multitasking capabilities.

Software Ventures of Berkeley, Calif., has begun testing Microphone II, a new version of its telecommunications program that will support background processing with MultiFinder. Microphone II has an enhanced scripting language that is fully compatible with MultiFinder's multitasking feature.

Users can write scripts that will connect with an electronic-mail service at designated times and download and file messages while another program is in use.

"All scripts will be completely transparent, and Microphone II will be as friendly and intuitive as the program's previous versions," said David Hidawi, president of Software Ventures.

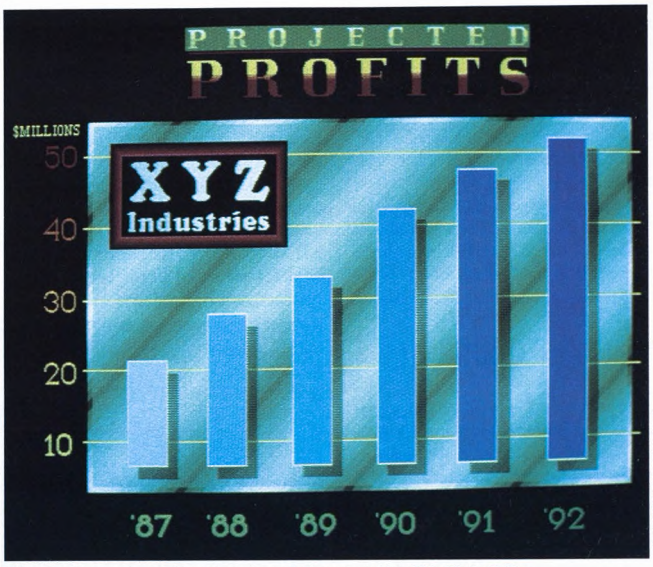
Atlanta-based Hayes is shipping a new version of Smartcom II for the Macintosh that also fully supports MultiFinder's multitasking capabilities.

The program can send and receive files while the user works with a word processor or spreadsheet program. Smartcom II Version 3.0 includes other functional enhancements, such as window support on the Mac II and support of Hayes V-series modems.

"It is exceptionally easy to incorporate background processing in any communications program. A program that doesn't support MultiFinder will not be competitive in the Macintosh market," said Scott Watson, developer of Red Ryder, a Macintosh communications program. Watson's most recent incarnation of Red Ryder, Version 10.3, also supports multitasking.

Software Ventures is located at 2907 Claremont Ave., Suite 220, Berkeley, Calif. 94705; (415) 644-3232.

Hayes Microcomputer Products Inc. can be reached at P.O. Box 105203, Atlanta, Ga. 30348; (404) 449-8791. ■



COURTESY VIDEOWORKS

Clip animation, sounds, graphics and movies can be incorporated into VideoWorks II files.

Clip art, sounds disks for VideoWorks II

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

LAS VEGAS, Nev. — MacroMind Inc. of Chicago announced the Clip Animation, Clip Sounds, Clip Charts and Movies accessory disks here at COMDEX/Fall '87 earlier this month.

The disks include animation, sounds, presentation graphics and movies that can be incorporated into VideoWorks II files and reused, much like Clip Art from T/Maker Co. of Mountain View, Calif. Using the Overview window in VideoWorks II, clip animation and sounds selected by the user can be added to a presentation by choosing a document icon and placing it, for example, in a slide show.

The Clip Animation disks include animations that can be modified by the user for his presentation. The Clip Charts disk is designed for presentation graphics and includes bar charts and graphs to which the user adds text and numbers. Pictures of objects, such as ships, planes, cars and buses, are included.

The Clip Sounds disks contain digitized sound files. One disk includes special effects and another includes music. Music from the Clip Sounds disk can be used in HyperCard stackware. The Movies disk allows users to add VideoWorks II movies to their presentations.

The Clip disks cost $59.95 each; the Movies disk is priced at $49.95.

MacroMind also announced the formation of a subsidiary company, MacroMind Productions, that will produce corporate and industrial videos. It already has produced videos with the Mac for Apple, Bell South, Du Pont, Lockheed and Microsoft, according to MacroMind.

"We were receiving such a large number of requests from Fortune 1,000 corporations and Apple third-party developers for animated presentations that we created a separate division within MacroMind to sell [to] and service this market," said Marc Canter, company president.

Macromind has produced customized color animation for corporate presentations, trade show demonstrations and product training. Apple's Guided Tour for the Macintosh was produced with VideoWorks II.

MacroMind Inc. is located at 1028 W. Wolfram St., Chicago, Ill. 60657; (312) 871-0987. ■

Paracomp licenses Modelshop

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

SAN FRANCISCO — Paracomp will announce this week that it has licensed Modelshop, a Macintosh port of Harvard University's Schema 3-D sketch modeling and architectural software.

"Modelshop is the first of a number of graphics programs for the Mac that will be introduced by Paracomp in the next year," said Bill Woodward, company president.

The San Francisco company said it plans to acquire and market several other scientific and engineering programs for Macintosh applications, including 3-D modeling, structural analysis, symbolic and numeric processing, and technical documentation.

Modelshop is the current name for the Mac program that will be available from Paracomp in the first quarter of next year, although the company said it may rename the program. Modelshop will be priced between $500 and $700. Beta testing for the program will begin next month.

Schema, the first incarnation of Modelshop, was developed on DEC VAX computers at Harvard several years ago and is being used in

See PARACOMP, Page 4

PARACOMP

Continued from Page 3

the university's Graduate School of Design by architectural students and professors. Paracomp will market versions of Modelshop for commercial designers as well as architectural students.

The program, which competes directly with Design Dimensions from Visual Information of LaPuente, Calif., and Space Edit from Abvent of Beverly Hills, Calif., allows users to do "rapid prototyping, the ability to draw dynamically something the same way you would use pen and pencil, which is an integral part of the design and development process," said Woodward.

"Modelshop, combined with the other things we are doing, will allow Paracomp to emerge as a leader in the engineering and scientific desktop marketplace within the next couple of years," he said.

Modelshop lets architects do a simulated 3-D walk-though of a building for a client and includes sophisticated drawing and design functions, such as hidden surface removal, perspective projection and the ability to import TIFF (Tag Image File Format), Encapsulated PostScript, PICT and DXF files from the AutoCAD program from AutoDesk of Sausalito, Calif.

Modelshop runs on the entire Mac family of computers but exploits the Motorola 68881 floating-point processor and the Standard Apple Numeric Environment (SANE) on the Mac II. On the SE and other lower-end Macs, Modelshop runs in "fixed point," said Mark Van Norman, assistant professor of architecture at Harvard's Graduate School of Design and the the developer of Schema and Modelshop.

"Fixed point is our way of running CAD applications like Modelshop faster. Where the Mac II has a floating-point processor in hardware, we've included a fixed point capability in software that speeds up numeric processing on the lower-end Macs," Van Norman said. "Fixed point supports the fastest representation of perspective projection and hidden surface removal on the lower-end Macs," he said.

Paracomp is located at 123 Townsend St., Suite 310, San Francisco, Calif. 94107; (415) 543-3848. ■

MacFair opens in Big Apple this week

BY RUSTY WESTON
MacWEEK Staff

NEW YORK — The debut MacFair in New York this week could turn out to be a big success even without major product announcements or a speech by Apple's Jean-Louis Gassee.

Ten thousand New Yorkers are expected to peruse 100 exhibits during the three-day show in Manhattan's Exposition Pier building. Tickets are $35 each and include any portion of the Thursday, Friday and Saturday shows.

"Because we're new to the Mac, almost any information we receive [at MacFair] has got to be useful," said General Electric's Anita Soracco, supervisor of materials information support services in Bridgeport, Conn. "We're looking for software that can enhance what we've got. I'm just going to soak up everything."

Although MacFair is not an Apple-sponsored event, Apple's products will be exhibited in Computer Factory store booths.

A company called American Expositions Inc. is staging the exhibition, said show director Victor Harwood. American Expositions puts on shows for the entertainment industry, the computer industry and the New York Writers Conference.

Some major exhibitors include Aldus, Ashton-Tate, Cricket Software, ACIUS, Layered, Quark, Borland International, Blyth Software, Hewlett-Packard and Great Plains Software.

On Nov. 18, the day before the exhibits open, 10 workshops will be held for corporate Macintosh users at the Marriott Marquis Hotel. Subjects will include publishing, graphic design, advanced typesetting, law office automation, advanced database management, networking and corporate productivity, financial analysis, accounting systems, CAD in architecture and construction, and CAD/CAM.

On the following three days, show attendees can participate in round-table discussions on topics ranging from Macintoshes in daily newspapers to games, music, art and desktop animation.

"We're not expecting it to be as big as Mac Expo, but for a first time, we think it's great," Harwood said. ■

THE PRUDENT Investor
The newsletter of personal money management
Vol. V No. 2 July 1987
Time to Return to Gold?
There's probably no better hedge against inflation. Gold is the internationally recognized medium of exchange. It's completely portable. And, unlike paper money, it has inherent value. But is it for you?
In times of economic or political turmoil people turn again and again to gold.
That's what makes gold prices go up in times of inflation. And why gold moves up when world peace is threatened.
As an investor, you have five basic ways to purchase gold.
1. Gold futures, like all futures contracts, are basically closed-ended speculations intended for sophisticated traders.
2. Gold stocks. Shares in mines are traded on all major exchanges. Some, especially South African mine shares, pay substantial dividends. (This is due to the volatile political situation there.)
3. Gold bullion can be bought at all large brokerage houses. These firms also store and insure bullion.
continued on page 12
Technical Analysis: Science or Sorcery? See page 6
The Rising Fortunes of the Humble Apple
Consumer demand has mushroomed in recent months for fresh fruit and produce.
What are the best plays in this trend for investors?
Dr. Vic Scallione, of the Washington State Department of Agriculture says
continued on page 3
Picking Your Stockbroker
If you happen to be picking a stockbroker for the first time, a good way to begin is with some solid recommendations.
Ask your lawyer, accountant, or banker for the name of a stockbroker, or a brokerage firm, that could take on your account.
Some investors suggest you choose several brokers at different firms and let each handle a part of your portfolio until you decide on the right one.
The broker you choose should have a philosophy about investment that is close as possible to your own. Find out how
continued on page 5
Amex Stocks 4
Commodities 8
NYSE 13
OTC Stocks 13
Real Estate 14
Special Report 9
Technical Analysis 6
Treasury Issues 12
Avoiding Wall Street's blind alleys: A Prudent Investor Special Report. See p. 9

To the thousands of Macintosh™ users who find themselves wishing there was a personal printer that lived up to their personal computer.

Including the executives, entrepreneurs, academics and other professionals who have been waiting for an affordable entree into the world of desktop publishing.

General Computer presents the reassuring paradox you see illustrated on these pages: the first affordable laser printer that prints like it costs thousands of dollars more.

INTRODUCING THE PERSONAL LASERPRINTER.

As the documents shown here demonstrate, the General Computer Personal LaserPrinter™ (PLP™) concedes nothing in printing capability to systems selling for twice its price.

If that still seems hard to believe, we invite you to consider the following.

Until now, anyone who bought a laser printer was also buying a computer. Because laser printers have always needed a processor, memory and other expensive hardware in order to create a printable page.

Our printer, on the other hand, eliminates much of this expensive hardware in favor of ingenious software.

Software that allows the printer's imaging to be performed by the computer you already own: the Macintosh. (Either the Macintosh Plus, the Macintosh SE, or the Macintosh II equipped with any hard disk.)

This arrangement also means the PLP is much more compact than other laser printers. (An almost diminutive 16" x 16½" x 9".) And having fewer and simpler parts, much less likely to need repairs.

THE PROOF IS IN THE PRINTING.

As you can see, a case could easily be made for buying the PLP on economics alone. But that would be selling it short.

Because the ultimate measure of any laser printing system

WHICH WAS PRINTED ON WHICH ON OU

©1987 General Computer Corp. The General Computer logo is a registered trademark of General Computer Corp. Personal LaserPrinter and PLP are trademarks of General Computer Corp. Microsoft is a registered Apple Computer, Inc. Manufacturer's suggested retail price: $2599. For dealer inquiries call (617) 499-4961 or (617) 499-4952. The documents above were created with PageMaker 1.2

COMDEX agreements may lead to low-cost PostScript compatibility

BY CLIFF LEHMAN
MacWEEK Staff

LAS VEGAS, Nev. — PostScript clone developers at COMDEX/Fall '87 two weeks ago announced agreements that may result in low-cost PostScript-compatible printers.

Phoenix Technologies Ltd. announced an agreement with Canon U.S.A. Inc., and both Conographic Corp. and Control-C Software Inc. announced agreements with Xerox Corp.

Phoenix's agreement with Canon of Lake Success, N.Y., will give the world's largest laser-engine manufacturer its first opening into the growing PostScript page-description language market. Both companies were mum on the particular Canon printers in which the Phoenix controller will make its appearance.

However, Lance Hansche, president of Phoenix of Norwood, Mass., said the two companies will work together to implement Kanji fonts for the Japanese domestic market as well as on color implementations. Hansche hinted that the availability of PostScript compatible interpreters and accompanying price drops will make personal laser printers possible.

"The Canon-Phoenix agreement is significant because it means that OEMS will have a real alternative to Adobe," said David Schechter, vice president at Homans, McGraw, an equity research firm in Boston.

Kentek Information Services Inc. of Allendale, N.J., announced separately that it also had licensed Phoenix's PostScript-compatible interpreter for use on Kentek controllers. The first Kentek printer to make use of the Phoenix interpreter will be the 24-page-per-minute K-3, said Francis Roumillat of Kentek. The Mac-compatible printer will be available in early 1988, he said.

In a related announcement, Bell and Howell's Quintar division in Torrance, Calif., announced signing a letter of intent with Toshiba America Inc. of Irvine, Calif., to deliver a PostScript-compatible controller kit for Toshiba's PageLaser12 laser printer. The controller uses Phoenix's PostScript-compatible interpreter. It will be available in early 1988 for less than $2,000. The Bitstream typeface library will be available on the controller.

Conographic of Irvine, Calif., announced an agreement to make its PostScript-compatible interpreter, ConoScript, available to Xerox of Rochester, N.Y. This is the first such agreement Conographic has announced. The company will adapt its ConoScript interpreter as well as the ConoDesk 6000 controller, ConoFontmaker technology and ConoType scalable outlines for Xerox peripherals.

Control-C Software of Portland, Ore., will provide Xerox with implementations of both Interpress and PostScript page-description languages under an agreement announced by Xerox last week. Xerox will license Control-C's PostScript-compatible interpreter, CCS-Page, as well as an implementation of Xerox's Interpress in the second agreement in two months between Xerox and Control-C.

Control-C's products will be used in Xerox printer products and Conographic's products in Xerox display products, said Xerox spokesman Dave Domesheck. ■

The newsletter of personal money management

THE PRUDENT Investor

Vol. V No. 2 July 1987

Time to Return to Gold?

There's probably no better hedge against inflation. Gold is *the* internationally recognized medium of exchange. It's completely portable. And, unlike paper money, it has inherent value. But is it for you?

In times of economic or political turmoil people turn again and again to gold.

That's what makes gold prices go up in times of inflation. And why gold moves up when world peace is threatened.

As an investor, you have five basic ways to purchase gold.

1. Gold futures, like all futures contracts, are basically closed-ended speculations intended for sophisticated traders.

2. Gold stocks. Shares in mines are traded on all major exchanges. Some, especially South African mine shares, pay substantial dividends. (This is due to the volatile political situation there.)

3. Gold bullion can be bought at all large brokerage houses. These firms also store and insure bullion.

continued on page 12

'85 '86 '87 Jan. Feb. Mar. 70 60 50 40 30 20 10

Technical Analysis: Science or Sorcery? See page 6

The Rising Fortunes of the Humble Apple

Consumer demand has mushroomed in recent months for fresh fruit and produce.

What are the best plays in this trend for investors?

Dr. Vic Scallione, of the Washington State Department of Agriculture says

continued on page 3

Picking Your Stockbroker

If you happen to be picking a stockbroker for the first time, a good way to begin is with some solid recommendations.

Ask your lawyer, accountant, or banker for the name of a stockbroker, or a brokerage firm, that could take on your account.

Some investors suggest you choose several brokers at different firms and let each handle a part of your portfolio until you decide on the right one.

The broker you choose should have a philosophy about investment that is as close as possible to your own. Find out how he

continued on page 5

Amex Stocks	4	Real Estate	14
Commodities	8	Special Report	9
NYSE	13	Technical Analysis	6
OTC Stocks	13	Treasury Issues	12

Avoiding Wall Street's blind alleys: A Prudent Investor Special Report. See p. 9

PLP quietly provides extraordinary finished output.

Near-typeset quality presentations, newsletters, memos and reports produced with software like Microsoft's Word and Aldus' PageMaker.® All printed with a new generation of laser printing technology that offers richer contrasts than ever before.

AN INVITATION TO SKEPTICS.

In short, the PLP does for printed communications what the Macintosh did for personal computing.

It provides a sophisticated, yet affordable tool for anyone who needs to manage large amounts of information—and wants to work smarter and more creatively in the process.

So to answer the question we began with: the PLP printed the document that appears on the right.

But you don't have to take our word for it.

We invite you to make your own comparisons through a PLP demonstration at any authorized General Computer dealer. Where you'll also be able to compare another pair of documents that are far easier to tell apart:

A Personal LaserPrinter price tag. And that of any other printer of equal quality.

For the name of the dealer nearest you, call (800) 634-9737. In Illinois, (800) 854-9737. Or, in Canada, call (800) 263-1405.

A $5000 LASER PRINTER? RS FOR $2600?

is how well it prints.

Like vastly more expensive laser printers, the PLP lets you print scanned photographs and illustrations, high-resolution graphics created with software like MacDraw® and Microsoft's® Excel, and otherwise juggle words and pictures until you have them exactly where you want them.

But it also provides valuable assistance even these vastly more expensive printers don't.

Including a choice of Bitstream® fonts limited only by your hard disk's capacity to store them. (Fonts you can enlarge or shrink to any point size, or fraction thereof.)

A preview feature that lets you review each page in its entirety before you print it.

And a draft mode that lets you rapidly print out works-in-progress for editing and revision by others.

Then, once all the editing and revisions are complete, the

GENERAL COMPUTER

trademark of Microsoft Corp. PageMaker is a registered trademark of Aldus Corp. Bitstream is a registered trademark of Bitstream Inc. MacDraw is a registered trademark of Apple Computer, Inc. Macintosh is a trademark of

Save your work with BOOKMARK

BY JIRI WEISS
MacWEEK Staff

NOVATO, Calif. — The bomb appearing on your screen may be a sign that you have just lost a day's work. A $99.95 Desk Accessory will save your work periodically and automatically restore you to approximately where you left off when you reboot.

Intellisoft International's BOOKMARK takes a snapshot of RAM at user-specified intervals — the default is every 2,000 keystrokes or five minutes — and stores it on the hard disk. Since BOOKMARK is heavily dependent on the system hardware, separate versions are required for the Mac Plus, SE and II. The package takes up about 9 Kbytes of RAM, but it will take as much memory on the disk as users have in RAM.

Besides providing data backup, BOOKMARK can be used to eliminate repetitive loading of a program. A keystroke will save your place in whatever you are doing.

The Mac Plus version is scheduled to ship next month, with the other versions to follow.

Intellisoft International can be reached at P.O. Box 5055, Novato, Calif. 94948; (415) 883-1188. ■

HyperCard clan gathers to look at multimedia future

BY JONATHAN PERROW
Special to MacWEEK

OAKLAND, Calif. — A diverse group of HyperCard users — from graphic designers to language professors — met at Mills College here recently to share their ideas, frustrations and enthusiasm for the future of HyperCard and multimedia.

The conference stressed HyperCard's audio-visual applications, which many of the more than 100 participants found difficult to discuss via electronic-mail networks. It was initiated by members of the Whole Earth 'Lectronic Link (WELL), a computer-conferencing system based in Sausalito, Calif.

"The day gives us a chance to answer questions, to see what other people are doing with HyperCard and what they might be doing in the future," said Hank Roberts, proofreader for the Whole Earth Catalog and volunteer at the WELL, when he spoke at the meeting between demonstration sessions.

Among the attractions at the conference was a sound and video digitizing demonstration by HyperCard expert Tim Oren of Apple, who manipulated selections from Grateful Dead songs to illustrate the ways that sound can be put into stacks.

"Zarabunda," an interactive video soap opera for teaching Spanish, was shown by John Underwood, assistant professor of Hispanic studies at Mills. Martine Boot, communications director at TVA Inc. of Mountain View, Calif., showed a HyperCard application for organizing and retrieving information about paintings on video disks.

Conference participants added their names to a "notebook" of HyperCard stacks throughout the day. The notebook will act as a networking database and maintain a catalog of new stackware. The relaxed diversity of the conference could be attributed to the absence of official sponsorship. Margo Nanny, Fabrice Florin and Steve Gano, all consultants at Apple along with Oren, organized the event, but HyperCard generated the enthusiasm. ■

Fabrice Florin, Margo Nanny and Steve Gano, all consultants at Apple, organized the HyperCard conference.

CAMILLE GOOD

Northern Telecom to ship 761-Mbyte server, tape-backup system

BY JIRI WEISS
MacWEEK Staff

ANN ARBOR, Mich. — Northern Telecom Inc. will ship a 761-Mbyte server and tape-backup system priced at $15,900 in January.

"The size of networks is growing and many people with graphics and CAD/CAM applications have immense storage needs," said Ken Nisbet, Northern Telecom's Memorybank program manager. "You put 20 people on a network and you are not talking about that much."

The system, called Memorybank761, consists of a single 8-inch disk with an average access time of 17.5 milliseconds and a 0.25-inch streaming tape drive. The unit, which weighs 80 pounds, is 10 inches wide, 22 inches high and 24 inches deep. It will hook up to any Macintosh network through its SCSI port.

"Other vendors may have the same capacity servers," Nisbet said, "but they do it with more than one drive. There is a problem every time you are relying on more than one device to be up ... You can string together multiple disks but reliability goes down the tubes." The disk comes with a two-year warranty.

The drive includes partitioning and backup utilities. The tape in the unit backs up designated portions of the disk at the rate of 5 Mbytes a minute, twice the speed of standard tape-backup units, according to Nisbet.

Users can back up their disk by file, by volume or by whatever files were modified in a particular session. The system automatically will verify backed up data against the original to make sure the backup is correct, Nisbet said.

Although Memorybank761 can back up in the background while the network is up, backup on some networks, including AppleShare, requires the network to be shut down, he said.

The SCSI server is the third addition to Northern Telecom's Memorybank servers, which include a 261- and 485-Mbyte units.

Northern Telecom Inc. is located at 100 Phoenix Drive, Ann Arbor, Mich. 48106; (800) 521-3278. ■

Apple donates $50,000 to EDUCOM software awards program

BY EMILY BROWER
MacWEEK Staff

CUPERTINO, Calif. — Apple has granted $50,000 to EDUCOM/NCRIPTAL Higher Education Software Awards Program, a program that recognizes development of academic courseware applications.

Apple's Wheels for the Mind courseware competition, announced last year, has been eliminated and the award money has been applied to the new awards program.

"This year Apple is eliminating its own awards program and, along with other vendors, putting resources toward strengthening and enhancing the EDUCOM/NCRIPTAL program. A united effort will help promote an abundance of high-quality software to meet the academic computing needs of higher education," said Bud Colligan, Apple's higher education marketing manager.

EDUCOM, a non-profit consortium of higher education institutions founded in 1964, and NCRIPTAL, a research program founded in 1986 at the University of Michigan in Ann Arbor and funded by the U.S. Department of Education, conducted the first Software Awards Program at the EDUCOM conference in Los Angeles last month. The 1987 contest, which awarded $37,000 to 27 academic developers, was funded by donations from NeXT Inc. of Palo Alto, Calif., and EDUCOM.

Seven developers won $5,000 each for software in seven categories. Among the prize-winning programs were "The Would-Be Gentleman," a history-based game that tests users' knowledge of 17th-century France by Carolyn Lougee and Tom Maliska from Stanford University in Palo Alto, Calif., and "Standing Waves," a simple presentation of a difficult topic in elementary physics by Eric T. Lane from the University of Tennessee at Chattanooga. ■

MacWEEK

EDITOR
Daniel J. Ruby

ART DIRECTOR
Laslo Vespremi

MANAGING EDITOR
Brenda Benner

NEWS EDITOR
Dale Coleman

SENIOR EDITOR
Henry Norr (Reviews)

TECHNICAL EDITOR
Ric Ford (Boston)

SENIOR WRITERS
Abigail Christopher, Rick LePage (Boston)

ASSOCIATE EDITOR
Charles W. Hoblitzelle

ASSOCIATE ART DIRECTOR
Melody Kean Haller

ASSISTANT ART DIRECTOR
Gail Wagner

STAFF REPORTERS
Elinor Craig, Cliff Lehman, Jonathan Swartz, Jiri Weiss, Rusty Weston, Clair Whitmer,

COPY EDITORS
Shari Lynn Allison, Charles Lenatti, Donna Peck

CONTRIBUTING EDITORS
John Edwards, Vernon Keenan, Jonathan Littman, Lawrence Magid, Steve Rosenthal

BUSINESS MANAGER
Karen Brannan

ADMINISTRATIVE ASSISTANTS
Tamara Gargus, Michelle Gargus

INFORMATION DIRECTOR
Emily Brower

PRODUCTION DIRECTOR
Barri Klingaman

PROMOTION DIRECTOR
Cynthia L. Ahart

CIRCULATION DIRECTOR
William Hooven

PUBLISHER
Michael Tchong

ADVERTISING MANAGERS
William Peck (West), Brice Hereford (New England), Nancy Carter (Southeast)

Editorial and advertising offices: 525 Brannan St., San Francisco, Calif. 94107, (415) 882-7370. East: One Kendall Square, Cambridge, Mass. 02139 (617) 577-1033

Patch Communications
CHAIRMAN
Glenn E. Patch

PRESIDENT/CHIEF EXECUTIVE OFFICER
B. Burrell Patch

VICE PRESIDENT/CHIEF FINANCIAL OFFICER
Donald F. Welk

VICE PRESIDENT/BUSINESS DEVELOPMENT
Linda Rew

GROUP PUBLISHER
Richard F. Govatski

MacWEEK (ISSN 0892-8118) is published weekly, except for two weeks at year-end, by MacWEEK Inc. 525 Brannan St., San Francisco, Calif. 94107, a subsidiary of Patch Communications, 5211 S. Washington Ave., Titusville, Fla. 32780. Single copy price including postage: $5. One-year subscription rates: U.S. $75, Canada/Mexico US $150, International: US $300 (airmail). All orders must be prepaid. Subscription inquiries should be directed to the Circulation Department, 5211 S. Washington Ave., Titusville, Fla. 32780, or call (305) 269-2687. Application to mail at second-class postage rates is pending at San Francisco, Calif., and additional mailing offices.

MacWEEK is an independent journal, not affiliated with Apple Computer Inc. Apple and Macintosh are trademarks of Apple Computer Inc. Entire contents copyright © 1987 MacWEEK Inc. All rights reserved. Material in this publication may not be reproduced in any form without permission.

POSTMASTER: Send address changes to MacWEEK, 525 Brannan St., San Francisco, Calif. 94107. Please allow six weeks for order and address change processing.

BPA membership applied for April 1987.

National Semiconductor

We were ready for the Mac II almost before they were.

INTRODUCING THE NS8/16 MEMORY EXPANSION BOARD FOR THE MACINTOSH II

National has been providing high-level add-in products for over a decade. We've helped well over a hundred thousand multi-tasking, multi-user business environments run faster and better. So even before Apple was ready with the new Mac™ II, we were ready with the expertise and technology to help it work harder.

In fact, we viewed the Macintosh™ II as an 'open' invitation to provide power users with the right tools. And now we're proud to introduce the NS8/16 Memory Expansion Board.

GET 4, 8, 12, OR 16 MBYTES OF RAM FEATURING:

- Apple/UNIX® (A/UX) compatibility.
- RAMdisk software.
- Advanced NuBus™ support.

Speed through memory hungry applications like: CAD/CAM. Desktop Publishing. High Resolution Graphics. Big Databases and Spreadsheets. Financial/Accounting packages. And AI Programming. Just to name a few.

AND RUN A/UX MORE EFFICIENTLY

High-end applications will run at top performance levels under A/UX. Without modifications. And the NS8/16 remains completely transparent to the user.

In the Macintosh II operating system, the RAMdisk utility allows an application to treat the NS8/16 as one, or a series, of pseudo disk drives, accessing files at NuBus memory speeds.

So memory intensive applications will go much faster. As will switching between applications.

ALL WITH QUALITY AND SUPPORT YOU CAN RELY ON

Get a full 5-year warranty on the NS8/16. Backed by the leader in memory products. And customer service.

National is the company you should think of for add-in products. Now, with our NS8/16 Memory Expansion Board. And in the future — you can expect to see a whole line of add-in products for the Mac II.

It's experience that lets us make a promise like that. So now that you have the Mac II ready to run, you know who can help you see how far it can go.

FOR MORE INFORMATION CALL THE COMPATIBLE PRODUCTS GROUP AT 800-345-4006 OUTSIDE OF CALIFORNIA CALL 800-538-8510

National Semiconductor

Macintosh and Mac are trademarks of Apple Computer, Inc.
UNIX is a registered trademark of AT&T Bell Labs.
NuBus is a trademark of Texas Instruments Incorporated.
© 1987 National Semiconductor Corp.

Is HyperCard surrounded by too much 'hype'?

BY CLAIR WHITMER
MacWEEK Staff

SAN FRANCISCO — HyperCard has been billed as the new way to share information, but in the market, some of the information being shared is mixed messages.

According to dealers, no one wants to be without a copy of HyperCard, yet some users declare that the emphasis on HyperCard is on the "hype." Others are so fond of Bill Atkinson's Mac creation that you might think they sleep with it under their pillows.

Members of the Berkeley Macintosh Users Group meeting at the University of California in Berkeley recently gave Apple Fellow Bill Atkinson and HyperCard a standing ovation after the programmer made a promotional appearance there. HyperCard and HyperTalk seminars and conferences are springing up everywhere. To those involved, HyperCard is the best thing since the Macintosh itself.

But some users have doubts about the value of the program for real-life applications. Some of the most vocal grumblers are programmers and more technically oriented users who frequent the bulletin boards. One recent and lengthy thread formed a lightning rod for HyperCard comments, mostly negative. Several users came to the on-line defense of HyperCard, but all agreed that only time will tell the actual impact of the program.

"What does HyperCard rely on the computer to do? Well, present cute pictures and backgrounds, a thousand and one types of buttons, and fields in which people can enter text ... [It] relies on the human 'author' for most of the intelligence about the data at the time the stack is prepared. I'd like my computer to work harder than that," said one user.

The basic objection of the naysayers seems to be that HyperCard doesn't do enough without direct action on the part of the user through HyperTalk. "There's something wrong with a program that can't do simple and necessary things in its claimed domain like multifield sorts of address books without requiring the user ... to learn how to program," said another user.

"There are serious omissions of everyday functions in the HyperCard user interface that can be remedied only by programming in HyperTalk," the user said in another message.

This leads the discussion to some of the participants' second pet peeve: HyperTalk. Some complain that the language is too limited, and others that it still isn't easy enough. They protest that the only real learning tool available so far is Danny Goodman's "The Complete HyperCard Handbook" and that even with this at their fingertips, the average user still won't find the language accessible.

"I have the book and I'm a novice, and I think the book presumes a good bit of programming knowledge ... I really think that the fascination comes when you already have learned the concept of programming," said one of the non-programmers in the discussion.

Some of the debate may originate in a lack of understanding about the program's nature, a confusion that has afflicted all types of users. One commercial developer who recently introduced three stackware products described HyperCard as a relational database in the company's press release. But Atkinson, HyperCard's creator, denies that the program is a relational database.

Atkinson has acknowledged the conundrum. He attributed it partially to the industry press and partially to marketing misrepresentation by Apple.

"Apple has been marketing this thing as hypertext. I don't really know what hypertext is. I wish Apple would market HyperCard more as a software erector set," Atkinson said.

He also said users are tackling HyperTalk sooner than he and his teammates anticipated. "We expected a more gradual migration through the levels from browsing to scripting. Many more people are jumping right into the scripting environment," Atkinson said.

Atkinson won't respond directly to the bulletin board comments. "[HyperCard] is something that is less powerful than an application but still much more than a document," he said.

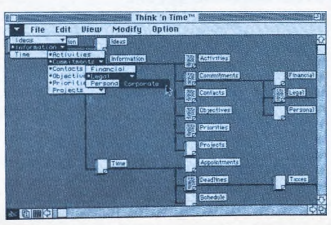
"When I design something, I stand out of my shoes as a programmer for a while and be naive and be a user. [But when listening to users] if I gave them exactly what they wanted, they wouldn't like it," Atkinson said. ■

"A simple idea, that's why it's so powerful" introducing Think 'n Time...

Imagine reducing all the sheets and piles of paper in your office to icons and having them automatically organized on your Mac's screen!

Get organized, visually.

See how your activities fit together! Organize them visually! With point and click ease, you create, open, close, collapse, expand and rearrange sheets and piles. Quickly store and access ideas and information. Think 'n Time links text information to dates, times and numeric values. It's great for everything from project management to remembering important birthdays. A desk accessory, it's always ready to visualize, record and access ideas, data, notes, dates and time.



It works the way you do.

Think 'n Time matches your style of business. It's totally flexible. Text, time and numeric capability let you have a calendar in your budget or a budget in your calendar. Throw in a memo or an estimate for good measure. The choice is always yours. You're never forced to enter information in rigid formats or templates. When you feel like organizing, just drag the sheets into place.

What's Next?

No matter how complicated your life, a "What's Next?" view provides a time-line organization, keeping you on track. A powerful search and browse capability gives you instant recall. Here's real help to plan, schedule, arrange, direct, control, monitor and analyze.

Order Today

Take control today. Improve your work-style and boost your productivity. Get that edge and move ahead. Order Think 'n Time today.

Not copy protected.

Only $99.95

See your dealer today or order direct. Add $5 for shipping. In CA add 6.5% sales tax.

For more information, contact Mainstay, 5311-B Derry Ave. Agoura Hills, CA 91301. (818) 991-6540.

In Europe, contact Mainstay, 71 rue des Atrebates, 1040 Brussels, Belgium. (02) 733 97 91.

Mainstay

Vendors hot to develop 68030 strategies

BY JON SWARTZ
MacWEEK Staff

SAN FRANCISCO — Where and when will the chips fall?

It may sound like an extravagant game of high-tech poker, but the principal players in the month-old 68030 market are holding their hands. The payoff: millions of users ready to sink their cash into a more powerful computer.

Apple is reluctant to talk, vendors balk and industry analysts squawk when asked about a 68030 microprocessor-based product.

John Sculley, Apple president, chairman and CEO, recently told financial analysts in New York that Apple won't make a 68030-based product until 1989.

But itchy-fingered vendors, anxious to capitalize on 68030 technology for the Macintosh, are coy about their plans.

"It's a crap shoot," said Richard Lucas, product manager at MacPeak, an Austin, Texas, accelerator board maker. "Apple may or may not come out with an '030 machine."

Another source, who asked not to be named, said Apple executives told him the 68030 will become a standard option for the 68020-based Mac II.

"We're certainly talking about a very intensive market," said Jeff Nutt, technical marketing manager at Schaumburg, Ill.-based Motorola Inc., which announced the 68030 microprocessor in October. "The 68030 is twice as fast as the 68020."

More than 10 million of Motorola's 68000 series of microprocessors are in use, 1.2 million of which are 68020s.

The market is so lucrative, analysts say, that vendors from the West Coast to the Deep South are developing an '030 strategy.

"Apple is waiting for others to develop products to get the bugs out," said Jan Lewis, president of Jan Lewis Research of Sunnyvale, Calif. "Besides, Apple doesn't want to impede sales of a six-month-old Mac II."

Third-party developers said Apple officials have hinted they may make an '030 computer or '030 Mac II upgrade, but those plans are at least a year away.

In Silicon Valley, where rumors are as rampant as bits and bytes — and just as perplexing — talk is that Apple has licensed Chips and Technologies Inc. of San Jose, Calif., to produce an inexpensive logic chip set that emulates Intel Corp.'s 80386 chip. If that is successful, Chips intends to make the chip set compatible with Intel's '286 chip and possibly the '030.

The gamble would appear to make sense since rumors persist that Apple isn't thrilled with Irvine, Calif.-based AST Research Inc.'s delays on the Mac86 and Mac286 MS-DOS coprocessor boards.

Apple, Chips and AST officials all denied the rumor.

"Anytime you have this many people (three companies) involved, you're conceivably going to get one person who makes that kind of statement," said Mark LeBar, AST's marketing manager of Apple products. "I don't know where [this rumor] started, but Apple has always told us it is satisfied with our coprocessor boards."

Meanwhile, Apple is denying reports that a Mac II built around the '030 and costing more than $10,000 will be released in 1988.

Motorola officials said an '030 workstation could cost as little as $2,000 because system designs wouldn't require extra components such as graphics coprocessors, memory management hardware and static RAM chips.

Nutt did reveal, however, that Motorola is working with Insignia Solutions of London and Phoenix Technologies Ltd. of Norwood, Mass., to upgrade software that allows MS-DOS to run on Motorola's 68020 coprocessor.

T.S.I. of Eugene, Ore., will release an '030 accelerator board for the Mac 512K, Plus and SE by second quarter of 1988, according to Robert Bauer, T.S.I. technical manager.

Quadram of Norcross, Ga., has hinted it may develop an 80386 coprocessor board for the Mac next year.

"It's a wild, open market," said Brad Baldwin, telecommunications analyst at Dataquest in San Jose, Calif. "Anything can happen." ■

FileMaker Plus. The data base and forms manager from Nashoba Systems.

The winner of top awards from both MacUser and Macworld is now the top-selling data base manager for the Macintosh.™ And for good reasons.

FileMaker® Plus is the first product for the Macintosh to combine professional data base management with the ability to produce professional quality forms.

FileMaker Plus makes it easy to quickly create any type of form you want: number-heavy forms like invoices, purchase orders and expense reports; and text-heavy forms like contracts and form letters. You can arrange drawings, photos, text, numbers, logos, and dates anywhere on the page for maximum impact, then preview what you've done on the screen to make sure it's exactly what you want. FileMaker Plus even includes templates for creating mailing labels, proposals, and Rolodex® cards.

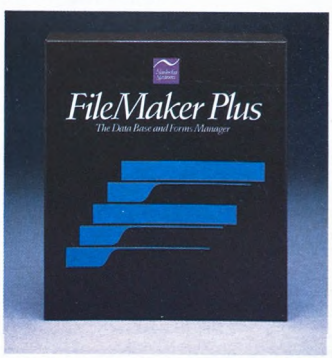
FileMaker Plus makes managing your data base just as easy. It automatically indexes every word, number and date you enter. You can look up pricing information and quickly calculate, sort, and summarize your invoices, automate your sales reports, produce contact lists, form letters, and mailing labels. All from the same data, without retyping. You can also exchange information with other applications, like Microsoft® Word, Excel, MacWrite,® MacPaint,™ and MacDraw™ to help you share information and formats.

And FileMaker Plus is on friendly terms with the entire Macintosh family, including the Macintosh 512K, Macintosh Plus, Macintosh SE as well as the Macintosh II, the ImageWriter® II and LaserWriter® Plus, and the latest system software, such as MultiFinder™ and AppleShare.™

Nashoba Systems is just as committed to FileMaker Plus today as we were when we first developed it. We'll continue to do all the things that have made it such a success: listen to our customers, provide outstanding free technical support, upgrade our product with the most advanced technology in an easily accessible form, and assure your satisfaction with our money-back guarantee.*

FileMaker Plus from Nashoba Systems. For only $295, it keeps your business running in top form.

Call us today for the dealer nearest you. **1-800-274-0610.**



© 1987 Nashoba Systems, Inc. FileMaker is a registered trademark of Nashoba Systems, Inc. ImageWriter, LaserWriter and MacWrite are registered trademarks of Apple Computer, Inc. AppleShare, MacDraw, Macintosh, MacPaint and MultiFinder are trademarks of Apple Computer, Inc. Microsoft is a registered trademark of Microsoft Corporation. Rolodex is a registered trademark of Insilco. *Money-back guarantee is available for thirty days from date of purchase. Details available upon request.

SNAPSHOTS

Borland ships Eureka, updates Turbo Pascal

SCOTTS VALLEY, Calif. — Borland International Inc. shipped two new software products for the Mac earlier this month and updated Turbo Pascal for the Macintosh to Version 1.1.

Eureka: The Solver is intended for Mac users in business, economics, statistics, engineering, the sciences and other disciplines that require mathematical analysis.

The program sells for $195 and works on the Macintosh 512KE, Plus, SE and II.

Borland is calling the program a "desktop engineering solution." Problems are solved by entering the equation into the input window and selecting the Solve command to search for the variables in the problem.

Eureka is able to take advantage of the Mac II's 60881 math coprocessor and color capability.

Turbo Pascal Database Toolbox, priced at $99.95, is a set of fundamental routines for database programmers. Full source codes for the toolbox are on the disk, so programmers can use it in their programs.

Turbo Pascal 1.1, which also costs $99.95, gives programmers full Mac II support. The new version includes the libraries needed to call the Mac II ROM Toolbox and system facilities.

Borland International is located at 4585 Scotts Valley Drive, Scotts Valley, Calif. 95066; (408) 438-8400.

Accounting package tailored for medical offices

FARGO, N.D. — Great Plains Software Inc. and HealthCare Communications have teamed up to produce an accounting software package tailored to the medical market.

Plains & Simple Healthcare Accounting is a "total practice management system when teamed with HCC's MacHealth series," the companies said in a joint statement. The two packages automate a medical office's business records.

The accounting package, which retails for $695, can be used for general ledger and accounts payable functions. It is available for the medical, optical, dental and chiropractic fields.

Great Plains provides a toll-free support line 60 hours per week and on-site training. The MacHealth Series can be leased for $350 per month or purchased for $3,795 for a single-user version, $5,205 for a multi-user version.

HealthCare Communications is located at 245 S. 84th St., Lincoln, Neb. 68510; (402) 489-0391. Great Plains Software is located at 1701 S.W. 38th St., Fargo, N.D. 58103; (701) 281-0550.

QuickShare provides high-speed PC-Mac link

BOULDER, Colo. — Compatible Systems Corp. has announced the production version of QuickShare, a high-speed hardware and software connectivity system for the Macintosh and IBM PC AT or XT. The product began shipping last month.

The $465 QuickShare transfers files at up to 4.2 Mbits per second between systems, offers universal PC-to-Mac file translation and allows Macs to share PC hard disks or PC LAN drives.

COURTESY COMPATIBLE SYSTEMS

QuickShare includes a SCSI add-in card that is installed in the PC and a cable to link the card to the built-in SCSI port on the Mac.

A QuickShare spokeswoman said once a Mac is connected using the system, it can read and write files using the PC's disk drives.

QuickShare consists of software, a 10-foot cable and a half-size PC slot circuit card. The product connects a PC operating MS-DOS 3.0 or greater with a SCSI-equipped Macintosh 512KE, Plus, SE or II.

Compatible Systems can be reached at P.O. Box Drawer 17220, Boulder, Colo. 80308-7220; (303) 444-9532.

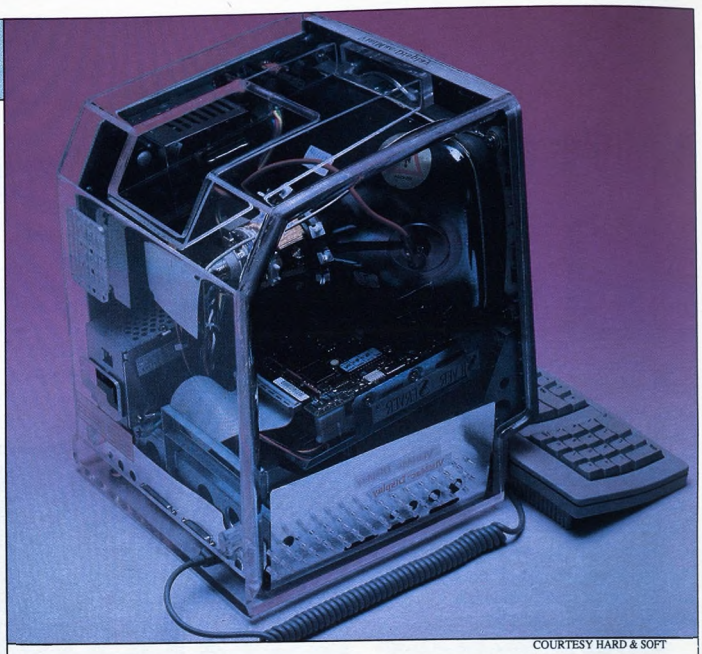
New versions of Varityper typesetter due in December

EAST HANOVER, N.J. — Two new configurations of Varityper's 600-dpi PostScript-compatible typesetter, the VT600, which was released earlier this year, will ship in December, the company said.

The new versions are the VT600Plus, which utilizes 31 PostScript type fonts, and the VT00S, which offers plain-paper output for Varityper's Signature Series Publishing System.

The VT600Plus has a list price of $14,495. VT600 users can upgrade for $995. The VT600S includes 40 preloaded Varityper PostScript-compatible styles and is priced at $14,995.

Varityper is located at 11 Mount Pleasant Ave., East Hanover, N.J. 07936; (201) 887-8000.


COURTESY HARD & SOFT

Hard & Soft cuts prices of internal hard disks for Mac II

FORT LAUDERDALE, Fla. — Hard & Soft Inc. recently reduced the prices of its line of internal hard disks for the Macintosh II.

It also released a new 45-Mbyte internal drive, the Silver Server 45i, which can be used by the Mac SE as well as by the Mac II. It costs $1,395.

Hard & Soft's 145-Mbyte Silver Server 145i now costs $2,995, down from $3,495; the 103-Mbyte Silver Server 103i is reduced to $2,195 from $2,995.

The company also offers an upgrade option for users of Apple's HD SC drives. The company will refit drives with either the 103- or 145-Mbyte disks for $1,397 and $1,797, respectively.

All drives have an access time of 28 milliseconds, a 1:1 interleave, and automatic head park and lock. The prices include backup and utility software and a one-year limited warranty. The company offers special discounts for universities, distributors and corporate accounts.

The company also offers a $279 see-through plastic case for the Mac Plus, SE and II intended for product demonstrations.

Hard & Soft Inc. is located at 2005 W. Cypress Creek Road, Fort Lauderdale, Fla. 33309; (305) 772-0430.

HyperCard series from HyperSource

FEDERAL WAY, Wash. — HyperSource has entered the race to release commercial HyperCard products at full speed with a series of HyperCard-based products, all selling for less than $20.

Talking Buttons, priced at $19.95, includes a library of buttons, complete with the sound simulation to pronounce the specified command. For example, when the Print button is selected, the machine says, "Print."

HyperSounds, also priced at $19.95, provides a similar library of musical instrument sounds. Buttons from both of these stacks can be pasted into other HyperCard applications.

The company's third piece of stackware, HyperHelpers, includes three business templates demonstrating how to manage people, products and services using HyperCard. The applications can be pasted into other HyperCard applications and include a series of scripting techniques. It sells for $14.95.

HyperSource is located at 2619 S. 302nd St., Federal Park, Wash. 98003; (206) 946-2011.

GreenLight Software offers customizable client database

CHICAGO — GreenLight Software has introduced a customizable client database called Client Portrait that works with Odesta Corp.'s Double Helix database on a Mac.

At $59.50, Client Portrait, a template, maintains a database of clients, and users can create personalized letters, mailing labels and reports. Attorneys can flag particular clients for tracking possible conflicts of interest under this system, the company reported.

In its turnkey mode, Client Portrait operates from three custom menus: Enter Data, Report and Letters. The program also offers on-screen support, including suggested formats to ensure accurate and consistent data entry, the company said.

The program was designed by an attorney, Daniel Kegan, president of GreenLight Software, a division of Elan Associates of Chicago.

The system includes the Double Helix software template, a manual, and a ThinkTank and a MacWrite outline of the Helix objects in Client Portrait.

It can hold data for 110 clients, including 440 people on an 800-Kbyte disk.

GreenLight Software is located at 79 W. Monroe St., No. 1320, Chicago, Ill. 60603-4969; (312) 782-6495.

Users share enthusiasm for 3+Mac

BY JON SWARTZ
MacWEEK Staff

SAN FRANCISCO — When 3Com Corp. announced a Macintosh module for its file server software this summer, industry observers hailed it as a windfall for Macs in corporate networks.

Several months later, good news is still blowing in the wind for networking vendor 3Com of Santa Clara, Calif.

Beta-test users are enthusiastic about 3+ for the Mac (3+Mac), which lets PCs and Macs share information and peripherals via AppleTalk, Ethernet and IBM's Token-Ring network connected to 3Com's 3Server3 file server.

What complaints users have with 3+Mac should be resolved when the second version of 3+Mac becomes available in mid-December, said Elaine Hanson, 3Com marketing manager for Macintosh products.

Meanwhile, industry analysts said 3+Mac is selling Macs as well as networks.

"This is great for Apple," said Paul Evans, vice president of S.G. Warburg, a San Francisco investment bank. "The product is from a well-known vendor with an installed base of 30,000 networks and positions the Mac nicely in the MS-DOS computer world."

A recent study by Future Computing Data Pro, a Dallas market research firm, estimated that the network systems market will increase five fold to $5 billion by 1990.

Dataquest, a San Jose, Calif., market research company, has reported that sales of the Mac are expected to nearly double this year to 700,000.

That hasn't gone unnoticed at Apple, where Peter Friedman, group marketing manager of desktop communications, sees 3+Mac as "a complement to AppleShare."

Widespread use

Wordlink Inc. of Champaign, Ill., is blazing trails for 3Com in the Midwest. The 3Com reseller has reported strong sales of 3+Mac to the University of Illinois at Urbana-Champaign and Motorola Inc. of Schaumburg, Ill., since the software shipped in August.

3+Mac "will have a major impact at Motorola," said Bob Weder, Wordlink's manager of network services.

Motorola Inc.

If the Macintosh were to weigh a pound, Motorola's communications sector in Schaumburg would have a ton of Macs. The division's 2,000 SE models represent one of the largest AppleTalk installations among Fortune 1000 companies with the most pervasive use of 3+Mac.

Motorola network specialists in Phoenix, Ariz., said they have purchased 3+Mac software to share files between IBM PCs and Macs early next year.

Ray Dubiel, manager of component engineering at Motorola's communications sector, has used 3+Mac since June to link departmental networks of 10 to 25 Macs to an IBM mainframe.

"We had a PDP 1170, an early generation DEC minimainframe, that was too bulky, expensive and slow," Dubiel said. "We wanted something faster."

Motorola uses 3+Mac for word processing and as a database and gateway to the mainframe.

New features

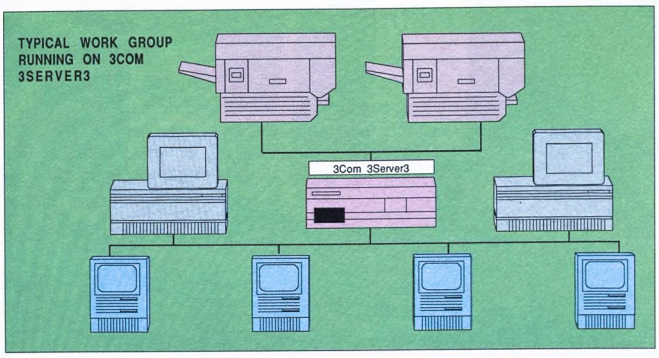
Although Dubiel and others, including William Witt, staff engineer at Martin Marietta Astronautics Corp. of Denver, praise 3+Mac, they say it could be better. "It needs faster throughput to AppleTalk," Dubiel said. "Ethernet support for the Mac II is also important."

A 3Com spokesman said 3+Mac's second version, scheduled to ship next month, includes Ethernet support for the Mac II, as well as "switch launch," MultiFinder and administrative features.

When Ethernet support is added, the Mac SE and II will be able to use Ethernet cards from 3Com, Apple or Kinetics Inc., the Walnut Creek, Calif.-based subsidiary of Excelan Inc. of San Jose, Calif., to increase the network's transmission speed to 10 Mbits per second.

In its current version, however, 3+Mac has been a plus to early users.

"We're in the process of developing a desktop publishing network and the Mac SE is ideal," Wordlink's Weder said. "It is slicker than anything IBM has to offer."



The network

Connections, a Fullerton, Calif., Mac networking newsletter, said in a review of 3+Mac that although the software is ideal for "a mixed shop of MS-DOS machines and Macs," it can be costly for businesses starting a Mac network.

The newsletter estimates it would cost $8,000 to buy a 3Server3 and the required software to make 3+Mac operable from scratch.

Hanson of 3Com countered that 3Com's network links an unlimited number of users at the same price, while Macintosh software from TOPS, of Berkeley, Calif., is limited to four to six users because it has no dedicated server and costs $189 per node.

She said PCs cost $389 per node on TOPS.

Martin Marietta

Martin Marietta Astronautics has a network of 12 IBM PC compatibles and 58 Macs on its Ethernet network. Engineers are using 3+Mac to share files, develop CAD drawings and exchange proposals.

Staff engineer Witt said he chose 3+Mac over Macintosh software from TOPS and Infosphere Inc. of Portland, Ore., because it was relatively inexpensive ($495), available and more expandable. Martin Marietta started using 3+Mac in March.

"The product's electronic mail and tape backup were especially good," Witt said. ■

Three new monitors introduced for Macintosh

BY CLIFF LEHMAN
MacWEEK Staff

LAS VEGAS, Nev. — New monitors for the Mac poured into the market two weeks ago at COMDEX/Fall '87, and three of them are from firms making their debut in the Mac market.

Taxan USA of City of Industry, Calif., introduced a 19-inch color monitor for the Mac II, the Super Vision 980/990. The 100-dpi, $3,495 monitor provides 256 colors from a 16 million color palette. The Super Vision is compatible with several available Mac II graphics controllers, but the company plans to market its own card by January 1988.

Micro Display Systems (MDS) of Hastings, Minn., unveiled a 15-inch, full-page display monitor for the Mac 512, Mac Plus and Mac SE. The 100-dpi MacGenius will cost $1,759 and be available at the end of this month.

Cornerstone Technology of San Jose, Calif., is shipping a 19-inch monochrome monitor for the Mac II. The Vista 1600 costs $2,195 and has a 1,600-by-1,280-pixel resolution.

Sigma Design of Fremont, Calif., has announced a Mac II version of its LaserView monitor for the Mac SE. The 1,664-by-1,200-pixel monitor will cost $2,395 and be available by the end of this month.

Thomson Information Systems Corp. of Culver City, Calif., brought out the least expensive monitor in the group at $895. The 14-inch Thomson 4375M will ship in December. ■

13V"/14" Monitor for the Apple Macintosh II

Turn Your Apple Into A Diamond

The *Diamond Scan (AUM1371A)* from Mitsubishi Electronics is a 13V" auto-tracking color monitor fully compatible with the Apple® Macintosh™ II. Make the move to Mitsubishi® today for all your Macintosh II needs.

- Auto-tracking
- Apple mode: 640 x 480 resolution
- Applications for presentation graphics, training, CAD/CAM and more
- Accepts TTL, analog, or television-type NTSC signals
- Tilt and swivel base available

Mitsubishi Electronics America, Inc., Computer Peripherals Division, 991 Knox Street, Torrance, CA 90502. Telephone: (213) 515-3993, ext. 382.

MITSUBISHI ELECTRONICS

Apple is a registered trademark of Apple Computer, Inc.

Now including LaserSpeed™ and Backprint™ Software — a $158 value!
Which Peripheral Land system do you need? Ask your dealer to help you make the right choice.

Peripheral Land's Turbo Drives are the world's *fastest* for the Macintosh . . . but don't take our word for it.

Lots of manufacturers claim outstanding speed. But can you believe them? Testing independently, three leading Macintosh magazines found out that none are faster than Peripheral Land's. You can trust *them:*

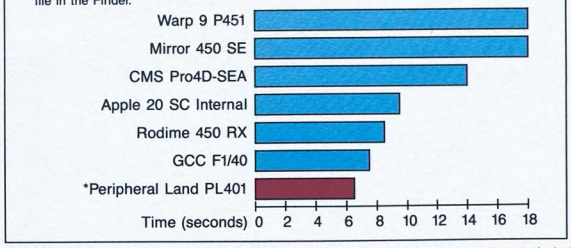
MACWORLD: "The Peripheral Land Drive is the hot rod of the group, a good choice if you need top performance right away."

MacUser: "Peripheral Land's hard disk drives are ranked #1 in speed, reliability, storage capacities and aesthetics."

MacWEEK produced this chart demonstrating how Peripheral Land beat out every other manufacturer:

HARD DISK PERFORMANCE

This graph charts read/write performance for different disks used with a Macintosh SE (1 Mbyte of RAM, cache turned off). Figures shown are times to duplicate a 766-Kbyte file in the Finder.


Warp 9 P451
Mirror 450 SE
CMS Pro4D-SEA
Apple 20 SC Internal
Rodime 450 RX
GCC F1/40
*Peripheral Land PL401
Time (seconds) 0 2 4 6 8 10 12 14 16 18

*The PL40i has been replaced by the PL50i since publication. The new drive is even faster!

PLI'S EXTERNAL HARD DISKS — our PL 30, 50, 100, 172 and 230 Turbo Drive Systems — provide a combination of speed, reliability, software and value that has earned them the top spot among SCSI hard drives.

Access time for PLI's external drives is as fast as 18 milliseconds. But our Turbo Software (featuring a disk technology called 1:1 Interleave) makes them even faster — three times as fast as some competitive drives that cost more.

PLI'S INTERNAL HARD DISKS are 30% faster than Apple's own internal drives, and up to 300% faster than other manufacturers'. These 30, 50 and 65 MB drives are carried inside the Mac SE or Mac II, saving valuable desk space and providing instant portability. We also include an external enclosure to house the SE's second floppy drive that is replaced by the hard disk. Another Peripheral Land exclusive!

With every Peripheral Land drive you get these new software programs absolutely free:

- **LaserSpeed**™— from Think Technologies. A new laser printer spooler with built-in cue management (a $99 value).
- **Back Print**™— a new Imagewriter spooler from Cortland Computer (a $59 value).

PLI's Turbo Software also gives you more utilities than any other hard drive: Partitioning with password protection, HFS/MFS support, DA volume mounter, file locator, and a powerful backup utility. They all serve to make your Mac run faster, easier and more effectively.

And the reliability of the units is also unbeatable: Every one of PLI's hard drives is completely tested and burned-in before shipping and carries a full one-year warranty.

Aren't Peripheral Land hard disks your best buy anywhere? We think it's obvious, but don't take our word for it. Ask your dealer. The best ones know us well. They are also familiar with our Infinity™disk drives and our tape backup systems.

If your dealer doesn't have Peripheral Land products, he'll be glad to call us for you.

You *can* take our word for that.

PERIPHERAL LAND, INC.
47800 Westinghouse Drive
Fremont, CA 94538
(415) 657-2211 TELEX 650305-1733MCI

HyperCard dominates Educom Conference

Some doubt program will replace current courseware

BY EMILY BROWER
MacWEEK Staff

LOS ANGELES — HyperCard hype almost overwhelmed this year's Educom Conference as Apple bombarded participants with free copies of HyperCard and offered a full schedule of HyperCard programming seminars.

A second Renaissance fueled by "three core technologies: hypermedia, simulation and artificial intelligence" was predicted by John Sculley, Apple president, chairman and CEO, during his keynote address at the conference, held here Oct. 20-23.

> "HyperCard generates more interest among non-programming faculty than any other program."
>
> **LARRY LEVINE, Dartmouth University**

But academic computing experts from more than 500 colleges and universities who were attending the conference reserved judgment on the possibility of a HyperCard revolution in higher education.

"I doubt that the program is going to be put to a lot of use on campus beyond small applications like HyperCard front ends for other programs," said Ira Fuchs, vice president for computing and information technology at Princeton University in Princeton, N.J.

As a tool for writing courses, HyperCard is not as powerful as existing courseware programs, according to Fuchs. "Course authoring programs are important, but they are not the only problem in creating good courseware. We need a next generation of sophisticated simulation software to really make a difference in courseware offerings and academic computing," he said.

HyperCard's significance for educational computing, as Apple views it, may be limited. "HyperCard is basically an electronic page-turner, and we know from previous experience that electronic page-turning isn't satisfactory from the student's point of view," said Dr. Doug Chute, director of neuropsychology at Drexel University in Philadelphia.

However, there are indications that HyperCard will be successful as a tool for classroom instruction. For Apple, Dartmouth College in Hanover, N.H., has developed a HyperCard training seminar, and test runs have produced several pieces of stackware used to illustrate complex concepts in the classroom. An abbreviated version of the seminar was conducted at Educom by Larry Levine, Dartmouth's director of social science computing.

"HyperCard doesn't knock everyone's socks off, but it does generate more interest among non-programming faculty than any other program I've seen," said Levine. "But HyperCard is definitely not a replacement for what already can be done with other course authoring programs."

Despite skepticism about HyperCard's ability to introduce meaningful change into educational computing, most academics exposed to the program agree on the conceptual importance of the program.

"HyperCard is the BASIC of the '90s. The same users who wrote BASIC programs for themselves will use HyperCard, but they will have important added capabilities like sound and graphics," said Nancy Yankelovich, project coordinator for Brown University's Institute for Research in Information Scholarship in Providence, R.I.

Surprisingly, even the most enthusiastic HyperCard promoters suffer from HyperCard burnout. David Bantz, director of humanities computing at Dartmouth and a member of the team that developed last summer's training seminars, blanched with dismay at the thought of conducting another two-day seminar.

"I guess I am a little jaded. I don't gush about the program anymore," Bantz said, sighing.

As to predictions about stackware proliferation on campus, Bantz was pessimistic. "I don't think students will be writing stackware themselves. At this point, no one can tell what the long-term effects will be." ■

IBM announces OS/2 to ship in December

BY DANIEL RUBY
MacWEEK Staff

LAS VEGAS, Nev. — IBM gained a step on Apple's operating system lead with its surprise announcement at COMDEX/Fall '87, held here earlier this month, that the initial version of its OS/2 operating system will begin shipping on Dec. 4, ahead of its previously announced date of the first quarter of 1988.

While the first iteration of OS/2 does not include the Macintosh-like Presentation Manager, it will permit multitasking and addressing of memory beyond 640 Kbytes. The Presentation Manager, the graphical user interface for the program, will be ready in October 1988, IBM announced.

The early shipment will not have a significant impact except to dampen rumors, according to Esther Dyson, publisher of Release 1.0. "It won't have any effect on the arrival of OS/2 application software," she said.

"When the Presentation Manager is released, you could argue that the PC will finally equal what the Mac offered in 1984. On the other hand, the PC now has true multitasking, which the Mac does not," said Jeff Raikes, director of application software marketing for Microsoft Corp. of Redmond, Wash. ■

Easy access to typesetting from Design Access

BY EMILY BROWER
MacWEEK Staff

SAN FRANCISCO — Professional typesetting and document scanning services are only a modem away with a new desktop and electronic publishing network from Design Access in San Francisco.

The Design Access Network offers around-the-clock access to on-line fonts and clip art libraries, and typesetting, scanning and electronic mail services.

"We want to be a one-stop source for the design community," said Bruce Ryon, president of the company, which is a spinoff from the San Francisco design firm Colophon.

The Design Access Network's range of electronic publishing services includes document scanning and an overnight typesetting service.

Designers can send formatted documents and specify fonts, output size and delivery method through the network's electronic-mail system and receive a typeset document within 24 hours.

The service costs about $12 per page, including the network's on-line fees and telephone changes incurred by the user.

"Designers like the convenience of sending a piece of work to be typeset from their office or studio. It's a lot cheaper than sending a $60-an-hour designer to sit in front of Macintosh at a copy center that happens to have a typesetting machine," Ryon said.

Design Access Network also will scan text and graphics documents with a Palantir Compound Document Processor and return the scanned file to the user through the system's E-mail service.

The network's electronic library provides a variety of graphics shareware and clip art from Symmetry Corp. of Mesa, Ariz. Additional features include on-line technical support and forums for discussion of desktop publishing issues and concerns.

Ryon said he also hopes to work out an agreement with Adobe Systems Inc. of Palo Alto, Calif., to offer its downloadable fonts through the network's on-line font library.

For Macintosh users on the network, Design Access is developing terminal emulation using MacWorkstation that will take advantage of the Macintosh graphic interface. MacWorkstation is a program from Apple for developing Macintosh front ends to mainframe computers. The terminal emulation will be available Dec. 1.

There is a one-time sign-up fee of $40; on-line costs are $10 per hour.

Design Access is located at 900 North Point St., San Francisco, Calif. 94109; (415) 885-3156. ■

35V"/37" Monitor for the Apple Macintosh II

The Big Apple

The XC3710SS from Mitsubishi Electronics is a 35V" auto-tracking color monitor fully compatible with the Apple® Macintosh™ II. Applications for presentations, training, CAD/CAM and more. Make the move to Mitsubishi® today for all your Macintosh II needs.

Mitsubishi Electronics America, Inc., Computer Peripherals Division, 991 Knox Street, Torrance, CA 90502. Telephone: (213) 515-3993, ext. 382.

MITSUBISHI ELECTRONICS

Apple is a registered trademark of Apple Computer, Inc.

SMART

Continued from Page 1

"We're developing new products for the Mac."

The new products, however, will not be a Mac version of SmartWare, he said.

The company is known primarily for SmartWare, a set of office automation tools that can be purchased separately or as a system. Innovative calls this concept "modular integration." At present, only a handful of Mac vendors, such as Microsoft Corp. and Lotus Development Corp., provide or have announced integrated packages.

A strong possibility for Innovative's future plans is to develop products that run under A/UX, Apple's version of the powerful UNIX operating system. A/UX is expected to be released by Apple in February. SmartWare already runs under UNIX and Xenix, Microsoft's version of the multitasking operating system.

Bruski said Innovative's first Mac products will run under the Mac operating system.

Although the company declined to be specific about the products it will introduce at the Mac Expo, a source in the Kansas City, Kan., Mac CORE user's group said the company bought a spreadsheet from a third-party developer. Innovative is recruiting programmers, technical people and manual writers from the user's group, the source said.

In light of the recent announcement of a merger with Informix Corp. of Menlo Park, Calif., Innovative's A/UX application may incorporate SQL database technology. Informix already has announced it will be the first company to offer Mac relational database products that use Structured Query Language (SQL).

SQL is an emerging standard for relational databases. It is targeted for government and academic markets, although businesses may want to use it to query mainframe databases.

Under the terms of the proposed merger, Innovative shareholders would receive three-quarters of a share of Informix common stock for each share of Innovative common stock. The proposed merger must first be approved by the board of directors and shareholders from each publicly held company. The deal, which will establish one company named Informix, is expected to close in February, Bruski said.

"In terms of where Innovative stood by itself, it was in a position to grow significantly as one of the few developers of high-caliber products under UNIX," said Brian Mutert, a software analyst for Robertson, Colman & Stephens in San Francisco.

"Marrying the two companies significantly enhances that position through cross-selling of products and utilizing a very complementary set of contact bases," he said.

William Shattuck, a software analyst with Montgomery Securities in San Francisco, said that combining Innovative, an $18.9 million company, with Informix, a $40 million company, produces a Top 10 software developer.

"The two companies complement each other's technology," Bruski said. "The goal of our new products is complete connectivity across all operating environments." ■

DARKROOM

Continued from Page 1

by everyone, not just experts," said Charlie Jackson, president of Silicon Beach Software. "Most people don't want to know the details of how to change a scanned image; they just want the end product."

Jackson said he believes Digital Darkroom, priced at $199, will be valuable for news-letter publishers as well as more sophisticated magazine designers. Image Studio sells for $495, according to analysts. Aldus Corp. of Seattle also recently entered the gray-scale software market with the addition of some image-processing capability in PageMaker 3.0.

Unlike Image Studio, Digital Darkroom is not a full paint program and offers only a limited set of painting tools and brush shapes. However, it has a broader range of selection tools than Image Studio, including a polygon and circle. These tools make silhouetting part of a picture much easier.

The most notable feature of Digital Darkroom is its raster-to-vector conversion routine, which Jackson claims is a first for the Macintosh.

Raster-to-vector conversion is a feature of some workstation-based CAD software, and it is offered by several companies in programs for the IBM PC.

With the Trace Objects command, the program scans the image, looks for a stream, or line, of pixels and creates an outline of the images in the picture.

The image is saved as a many-sided polygon and can then be worked with in any vector-based application.

Vectorized objects can be rotated, resized and manipulated without loss of resolution. With Adobe Illustrator or Aldus' FreeHand, the images can be manipulated with true Bezier curves.

Jackson said that the raster-to-vector conversion process is not perfect because the software selects the points to represent the bit-mapped image.

"Converted images will need to be tweaked," he said.

Digital Darkroom shares many of the functions of Image Studio. However, it offers two separate gray-scale maps, one for gray values and one for brightness and contrast. Image processing can be done either with non-permanent filters or by mapping permanent attributes.

These filters offer a variety of preset special effects, including posterizing (creating a high-contrast image), blurring (smoothing out rough black-and-white transitions), equalizing, reversing and despeckling.

An infinite variety of other effects is possible by manually setting a histogram, a graphic representation of the image's gray-scale settings. The histogram appears in a dialog box with a sample image so the user can see the effect of particular changes.

Digital Darkroom's versatile selection tools allow users to choose specific areas of an image for manipulation. Once a section is highlighted, gray values can be changed, MacPaint-type patterns can be inserted or silhouettes can be pulled out. Brightness and contrast can be altered for the entire image, but not in selected areas.

A magnifier and brush allow the user to clean up the edges of an image. However, Jackson said that "we are not touting this as a tool for airbrushing."

Digital Darkroom will ship in the first quarter of 1988 and will be shown at the Mac Expo in San Francisco in January.

Jackson also said the company soon will release an upgrade to SuperPaint, providing an Airbrush tool and the ability to utilize Bezier curves and rotate objects.

"The paint side of SuperPaint is strong," Jackson said. "The upgrade will make the draw side more competitive." ■

PERFECTEK

Continued from Page 1

$995. The competing product from AST Research of Irvine, Calif., will sell for $599.

"The technical features are superior [to AST's board]. We did not design our board based on what AST did," said Sam Satya, PerfecTEK president. He said the screen refresh speed is much faster with PerfecTEK's board.

Although comparisons with AST's board are inevitable, PerfecTEK's "main mission in life is not to compete with AST," said Satya.

The product is MultiFinder compatible, though PerfecTEK's Nathan said that this capability has not been tested rigorously. "We only received MultiFinder 10 days before COMDEX (held earlier this month in Las Vegas, Nev.)," said Nathan.

The company also has not tested the board for compatibility with DaynaFile from Dayna Communications or Peripheral Land's Infinity 5.25-inch disk drives. The company has ordered both drives and intends to conduct extensive tests while awaiting FCC approval.

"We'll make sure we support it," Nathan said.

PerfecTEK surprised many attendees at COMDEX/Fall '87 with its unheralded announcement of the board. Nathan describes the company as "very, very start-up," and the name is relatively unfamiliar to many industry observers.

The last announcement from the company was at the Mac Expo in January, when it introduced the Mac+PC coprocessor for the Macintosh Plus.

This product also is awaiting FCC approval but will start shipping within the next few weeks, according to Satya.

He estimates that the potential installed base for this product is 600,000 to 700,000 Mac Plus owners. No other company has announced plans to develop a coprocessor for the Plus.

PerfecTEK's strategy in releasing its boards was to begin with servicing the largest installed base. The Mac Plus board was designed first, followed by one for the SE, and a coprocessor for the Mac II is planned to be introduced at the Mac Expo in San Francisco in January, according to Nathan.

Despite the company's initiative in being the first to start shipping an SE board, analyst Jocelyn Young of Future Computing in Dallas said that doesn't necessarily give PerfecTEK an advantage over AST.

"Any new company won't have a distribution channel in place like AST does. AST also has the breadth of product offerings," Young said.

PerfecTEK Corp. is located at 726 S. Hillview Drive, Milpitas, Calif. 95035; (408) 263-7757. ■

APPLE

Continued from Page 1

PU2.1 industry standards within the next three to four years, said Stewart Alsop, editor of the newsletter PC Letter, based in Redwood City, Calif.

IBM has announced it will ship an extended version of OS/2 in July 1988 that will include LU6.2 and PU2.1 features.

"The bottom line is that Apple will beat IBM to the punch with a more functional program," Rampel said. "It will eclipse OS/2 in connectivity."

Users who were trying to determine Apple's strategy with LU6.2 so they can plan network functionality for the next few years were enthusiastic about the project.

"We're always interested in standards that make our job easier," said Larry Martinez, product manager of computer services at Boeing Co. of Seattle. "I'm interested in any program that makes my job easier."

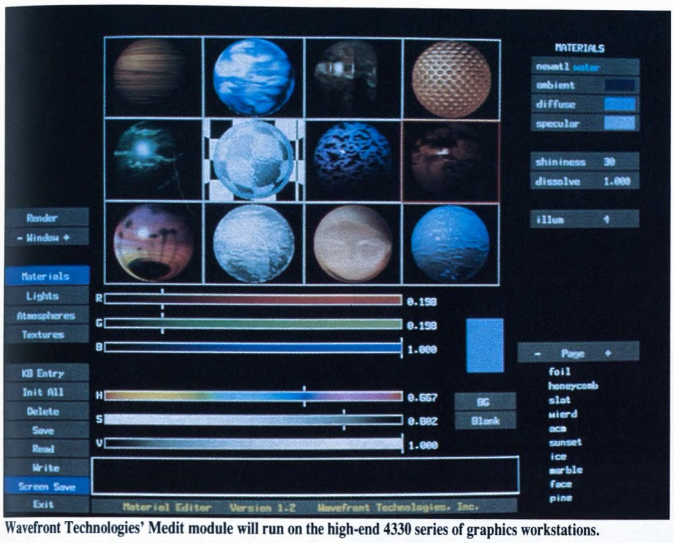
Boeing uses 1,500 Macintoshes on its Seattle network.

"This would appear to allow different architectures like TCP/IP (Transmission Control Protocol/Internet Protocol) and XNS (Xerox Network System) to function on the same network," said William Witt, staff engineer at Martin Marietta Astronautics Corp. of Denver. "I'm all for it; in fact, I'll beta test it."

Alsop said LU6.2 hasn't prospered because software development is complicated and requires extensive redesign.

But that doesn't concern users like John DuBois, senior technical adviser for Seafirst Bank of Seattle, and Ray Dubiel, manager of component engineering at Motorola Inc.'s communications sector in Schaumburg, Ill.

"Apple seems to be getting more aggressive in desktop communications," DuBois said, referring to Apple's MacWorkstation and 3270 emulation cards in addition to LU6.2 and PU2.1 software. "This is just the beginning." ■



COURTESY WAVEFRONT TECHNOLOGIES

Wavefront Technologies' Medit module will run on the high-end 4330 series of graphics workstations.

3-D animation package ported to Tektronix 4330

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

DETROIT — Wavefront Technologies of Santa Barbara, Calif., announced at AUTOFACT '87 last week that it has ported its 3-D animation and rendering software to the high-end 4330 series of graphics workstations recently introduced by Tektronix Inc. of Wilsonville, Ore.

Wavefront's software modules, Model, PreView, Medit and Image, used by government contractors and Apple for applications ranging from weapons design to video production, have been running on high-performance graphics workstations from Silicon Graphics of Mountain View, Calif., since 1984.

In benchmark tests by the company, the new systems rendered speeds of 450,000 two-dimensional vectors per second, 340,000 3-D vectors per second and 20,000 Gouraud shading polygons per second.

The 4330 series workstations are configured around the Motorola 68020 CPU and 68881 floating point processor; run UTek, Tektronix's UNIX; and support Ethernet and TCP/IP (Transmission Control Protocol/Internet Protocol).

The systems cost between $37,500 and $51,000. A complete 4330 system running the Wavefront modules will ship in March and have a base price at $90,000.

Wavefront Technologies is located at 530 E. Montecito St., Santa Barbara, Calif. 93103; (805) 962-8117. Tektronix can be reached at P.O. Box 1000, Wilsonville, Ore. 97070; (503) 682-3411. ■

Intergraph releases next-generation processor

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

DETROIT — Intergraph Corp. of Huntsville, Ala., announced its next-generation proprietary 32-bit processor, the Clipper C300, here at AUTOFACT '87 last week.

The new processor, which succeeds the 33-MHz C100, is the heart of Intergraph's Clipper workstations. In benchmark tests it performed at 50 MHz and 13 million instructions per second (mips), the company said.

The C300 is configured around a CPU chip, two cache memory management units (CAMMUs) and an IEEE standard floating point unit (FPU). The new processor includes data and instruction caches and a floating point processor, similar to Motorola's 68030 Harvard-style architecture.

"We are not competing with Motorola's 68020 and 68030 [chips]. We're competing with the SPARC (scalable processor architecture) chip (from Sun Microsystems Inc. of Mountain View, Calif.) and the AMD 29000 (from Advanced Micro Devices of Santa Clara, Calif.) of the chips that are available on the market," said Mike Newman, Intergraph's technical marketing manager.

Intergraph will sell the chips in volume to a number of workstation vendors, just as Motorola sells its 68000 processor family.

Sample Clipper C300 chips will be available in the second quarter of next year. Volume shipments are planned for the third quarter of next year.

Intergraph also announced a low-end 4-mips UNIX workstation, the InterPro 120. It comes with 15-inch or 19-inch high-resolution color displays, priced at $16,000 and $19,000, respectively. The system includes an IEEE standard floating point processor, 6 Mbytes of main memory, an 80-Mbyte internal hard disk, Ethernet networking with XNS protocol, 16 bit planes of color, VT220 terminal emulation and SoftPC, a PC-DOS emulation option from Insignia Solutions of London.

Intergraph Corp. is located at 1 Madison Industrial Park, Huntsville, Ala. 35807; (205) 772-2000. ■

Motorola announces '030-based computers

LAS VEGAS, Nev. — Motorola Computer Systems announced the first 68030-based computers, models 430 and 630, here at COMDEX/Fall '87 earlier this month.

"We compete with vendors such as Nixdorf of Waltham, Mass., and NCR of Dayton, Ohio, that incorporate the '030 technology," said Jack Hendren, the division's marketing director.

The 430 and 630 computers, part of Motorola's System 8000 series, will incorporate the 25-MHz version of the 68030, VMEbus architecture and standard AT&T UNIX 5.3 and will run the company's Lifeworks data entry/data capture software modules.

The 630 supports work groups of 30 to 66 users, 12 printers, a 20-slot VMEbus, six fixed disk drives and up to 2.5 Gbytes of external disk storage. The 630 is priced between $40,000 and $100,000. The 430 will support 12 to 50 users, up to four fixed disk drives and a 12-slot VMEbus. The 430 will range in price from $32,000 to $75,000.

Motorola Computer Systems Inc. is located at 10700 N. DeAnza Blvd., Cupertino, Calif. 95014; (408) 255-0900. ■

Apollo workstation 'ruggedized' for factory life

DETROIT — Apollo Computer Inc. announced the DN3040 Ruggedized Workstation and Computer Integrated Manufacturing (CIM) software at AUTOFACT '87 held here last week.

The DN3040, a Motorola 68020/68881-based workstation, has been "industrialized," or designed to resist strong shocks, vibration and extreme temperature changes.

The system has a base price of $11,900 and includes an IBM PC AT-compatible bus, 8 Mbytes of memory, a 155-Mbyte hard disk, a 5.25-inch 1.2-Mbyte floppy disk drive and a 60-Mbyte 0.25-inch cartridge tape. Users can choose between the Apollo token ring or Ethernet networks.

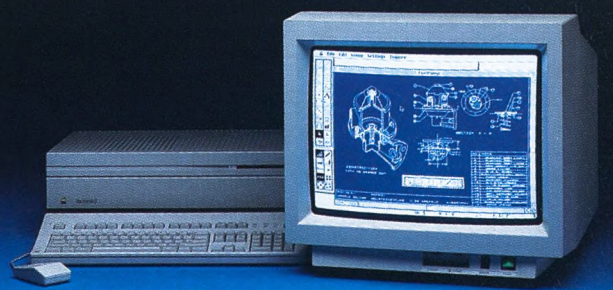
The system also provides simultaneous display of 16 colors from a palette of 4,096 and a 15-inch 60-MHz color monitor with resolution of 1,024 pixels by 800 pixels.

Third-party developers that have ported CIM software to the DN3040 include CIMPOINT of Austin, Texas; Elcam Inc. of Waltham, Mass.; METCUT Research Associates of Cincinnati; and Palladian Software of Cambridge, Mass.

Apollo Computer is located at 330 Billerica Road, Chelmsford, Mass. 01824; (617) 256-6600. ■

19V"/20" Monitor for the Apple Macintosh II

Apple Crisp



The C6922AGK from Mitsubishi Electronics is a 19V" color monitor fully compatible with the Apple® Macintosh™ II. Make the move to Mitsubishi® today for all your Macintosh II needs.

- Crisp, clear, colorful
- Apple mode: 640 x 480 resolution
- Super high contrast glass improves viewability
- High resolution for CAD/CAM applications
- Tilt and swivel base available

Mitsubishi Electronics America, Inc., Computer Peripherals Division, 991 Knox Street, Torrance, CA 90502. Telephone: (213) 515-3993, ext. 382.

MITSUBISHI ELECTRONICS

Apple is a registered trademark of Apple Computer, Inc.

Software-only retailers snare growing share of market

BY RUSTY WESTON
MacWEEK staff

SAN FRANCISCO — An egg with the face of Albert Einstein is moving lots of software these days. Another successful software chain greets its customers with a commemorative plaque of its namesake, the 19th-century inventor Charles Babbage.

Far from mystifying customers, Egghead Software and Babbage's Inc. — although vying for different slices of the microcomputer software pie — have simplified the way software purchases are made in America.

At your local HardwareLand, the software languishes on a corner shelf among the Macs and PCs. But at Egghead and Babbage's specialty stores, no software package is an island.

"You don't buy records in stereo stores," said Gary Kusin, president of Babbage's, a Dallas-based chain that has multiplied from one store in 1983 to 41. "Hardware is high ticket, with thin margins and commission driven. Software is low ticket, high margin and not commission driven," he said.

Kusin said Babbage's is modeled after low-priced retail stores. "We don't think of ComputerLand or NYNEX," he said. "That's not us. We're a mall (shopping center) retailer."

Retail marketing — combined with no frills, low price, value-added dealers like these — could help double the U.S. software market to $10 billion by 1990, according to software vendors, resellers and market analysts. Although exact figures aren't available, software-only retailers sell slightly less than half of the software sold each year in the United States.

The Wall Street Journal recently reported that Egghead, a national chain based in Bothell, Wash., sold $200 million worth of software and Babbage's Inc. sold $25 million. Neither privately owned company would confirm or deny those figures.

MICHAEL JAY

The Wall Street Journal recently reported that Egghead sold $200 million worth of software.

"I think it's a definitive trend in the marketplace, partly because software is such a difficult animal to wrap yourself around," said software analyst Brian Mutert of Robertson, Colman & Stephens, a San Francisco investment bank. "You have to work with software for a while to understand its nuances and provide intelligent advice to customers."

Corporate customers tend to fall into two camps. In the minority are large companies that test products in-house, buy software in volume and seek substantial discounts. These large customers tend to buy directly from software vendors or through telemarketing/mail-order houses.

But most American corporations, corporate consultants and MIS employees do little in-house testing and often rely on value-added resellers for advice on software purchasing, especially for new products. There is an exception; once a company is familiar with a product, it shops around for the best price, which usually is obtained from a mail-order house.

Stores that can handle both types of software shoppers, such as Egghead, which accepts corporate orders by phone, have an edge in the segmented marketplace.

"Egghead is a hybrid between a retail store and an out-bound sales force," said Scott Oki, vice president U.S. sales and marketing for Microsoft Corp. of Redmond, Wash. "People who go into Babbage's or Egghead are different from customers who go into Businessland."

"What is important is that Egghead creates a positive environment to do business," said Victor Alhadeff, founder and president of Egghead. "As a result, shoppers expand their portfolio of software programs by shopping at Egghead."

Egghead has sprouted from one store to 81 stores since 1984. "We're the place for people who know the difference between a potato chip and a microchip," Alhadeff said. "No one has more selection or as wide an assortment of current versions of Mac software."

Some vendors contend that the product creates demand, not the store lighting or mascot.

"It is still the primary responsibility of the software vendor to create demand for the product," said Ed Esber, chairman of Ashton-Tate of Torrance, Calif. "People like Egghead can impact demand, but we have to create that at the user level for our products."

"We all thought there would be software-only retailers a few years ago, but the market wasn't ready until recently," said Darrell Boyle, president of Trailblazer Consultants of Saratoga, Calif. "They reflect and fill a real need." ■

Computer stocks stabilize after market crash

BY JOSEPH PERATES
Special to MacWEEK

Publishing stocks showed mixed results in the aftermath of the stock market crash. While smaller stocks traded over the counter fared worse than larger ones in the first days of the collapse, those same smaller companies recovered faster in the following two weeks.

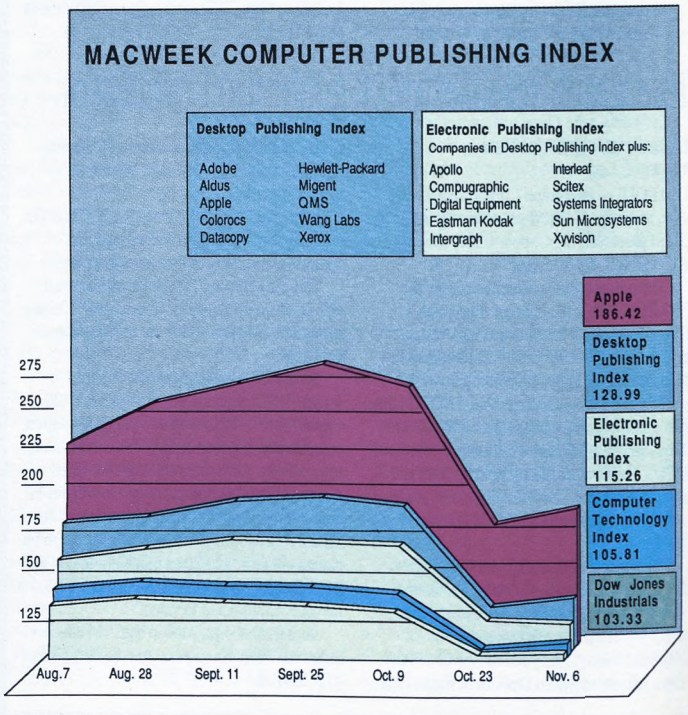
Between Oct. 23 and Nov. 6, the 10 companies comprising the MacWEEK Desktop Publishing Index gained 4.08 percent. But when figures for 10 companies that manufacture systems for larger computers are added to the DPI companies, the total group of 20 fell by 2.42 percent during that period. The Dow Jones Industrial average rose a scant 0.42 percent; the Computer Technology Index gained 3.17 percent; and Apple advanced 5.96 percent.

The rally in personal computer-based stocks reflects buying by individual bargain hunters looking for a quick recovery from the crash. On the other hand, the fall in the Electronic Publishing Index indicates greater skepticism by institutional money managers, who avoid over-the-counter stocks in favor of blue chips (including several in the EPI). Apple's strong rise was helped by a positive article in Barron's, which noted that Wall Street is looking to the company for continued rapid growth. Besides good sales of the Mac SE and II, Barron's took note of strong sales this school season for the Apple IIGS and Apple's potential for growth in foreign markets.

Aldus Corp. finished the period at 18-1/2, up from its post-crash low of 15, on news of better-than-expected earnings and product announcements of FreeHand, SnapShot and a PageMaker upgrade.

The big question in the crash aftermath is whether computer buying patterns will change. It is still early, but there are not yet indications that is happening. Digital Equipment Corp.'s President Ken Olsen, speaking to shareholders at DEC's annual meeting, said that as world economies adapt to the declining value of the dollar, "it may very well cause a recession, but we aren't predicting one. Customers are saying that they will be careful in their commitments [to new computer purchases], but so far they have not cut their commitments."

Joseph Perates, a stockbroker in the Newport, R.I., office of Thomson McKinnon Securities, (401) 849-2825, developed the MacWEEK Desktop Publishing and Electronic Publishing indexes. His opinions are his own.



Macs join NASA's space station effort

BY CLAIR WHITMER
MacWEEK Staff

HOUSTON — Macs in space? No, not yet, but the Macintosh II is being used to help develop something literally out of this world — NASA's Space Station Program.

The 196 Mac IIs that the National Aeronautics and Space Administration has on the project will go where no Mac has gone before under the guidance of a team of Lockheed, Ford Aerospace and Planning Research Corp. employees. The team is the winner of the Software Support Environment (SSE) contract for the space station, officially signed in September, although the work began July 10.

Lockheed won the $200 million contract by submitting a plan to connect three workstation platforms — the Mac II, IBM AT compatible and Apollo DM 3000 — to VAX 8800 and IBM-based host computers, according to James Raney, NASA engineer and SSE project manager. The proposal blueprint calls for 490 workstations in all, 40 percent of which will be Apple machines.

The SSE will provide the context for "the life-cycle management of all operational [Space Station Program] software," according to NASA's official outline for the project. This includes the software, procedures, standards, hardware specifications, documentation, policy and training materials for the programmers and engineers who are designing the space station.

The idea is that all the software needed for any portion of the Space Station Program will be available on every workstation platform, from the programs for designing training materials to the engineering packages required for designing the navigation and control units or temperature control of the station itself.

"We're not tied to any one technology. That's one of the goals of the space station environment," Raney said.

Users of the SSE range from the systems engineers to the flight crew. The result will be that "a user who prefers a particular architecture can do his job from A to Z on the IBM AT, for example, and another user can do the same set of jobs from A to Z on the Macintosh," Raney said.

The SSE also must support all this software, a responsibility that will extend for the full 25 years of the Space Station Program. The SSE therefore must be able to keep up with the expected changes in technology and will use the three different workstation platforms to obtain maximum flexibility.

"The SSE shall be loosely coupled with hardware and vendor-supplied operating systems software," said NASA's Request for Proposal on the subject. This way the program is free to take advantage of technological trends as they develop.

The Macintosh's inclusion in the SSE is especially valuable for Apple because the Mac is being accepted as a development and engineering tool equal to the other workstations, not just being given a token nod as a good machine for desktop publishing or decorative graphics.

"Apple considers this an important utilization of the Macintosh hardware. They're very proud," said Stan Mann, Lockheed's manager of systems engineering for the SSE.

"This is a real big deal for Apple," acknowledged a source at the company.

Apple is not involved actively in the development process, but it is a ready and eager supplier of workstations to Lockheed, which will give 126 of its Macs to NASA as the project evolves. Twenty Macs have been delivered so far, according to Mann.

This also spells good news for selected Mac software vendors that provide highly technical and vertical packages. Iconix of Santa Monica, Calif., for example, sold Lockheed more than 100 PowerTools engineering packages, each worth $3,295.

This winter, NASA will begin signing 700 to 1,500 work package contractors, the Space Station Program designers themselves. Each WPC, as NASA refers to the designers, will be given the option to choose which workstation they prefer. Raney predicts that 35 percent to 40 percent will chose the Mac II, providing a potential 245 to 525 in additional government sales for Apple.

How engineers will use the respective machines is unclear since this is the project's primary phase, a period covering the first year of setup and operation. The second phase will extend over the following five years. NASA then has an option of extending the contract for three years.

In whatever lies ahead for the space station, one thing is certain — the SSE will provide a valuable testing ground for the real-life uses of the Mac. ■

Sales incentives issued for Reflex Plus

SCOTTS VALLEY, Calif. — In a follow-up to its announcement last month of a comarketing deal with Apple, Borland International Inc. will launch a sales promotion for its Reflex Plus database on Nov. 15.

Until Jan. 31, participating dealers will distribute free demonstration copies of the program and $30 coupons, which can be redeemed on the purchase of Macintosh hardware or software products. Sales people at computer retail stores will earn bonuses of up to $25 per Reflex Plus package.

"We have two objectives in this plan," said Louise Stanley, marketing manager for Borland's Macintosh division. "We hope to establish Reflex Plus as the standard database for business users. We also want to establish mindshare for Borland in the retail channel, where historically we have not been strong."

The promotion is funded jointly by Apple and Borland, Stanley said.

Borland International is located at 4585 Scotts Valley Drive, Scotts Valley, Calif. 95066; (408) 438-8400. ■

CALENDAR

NOVEMBER

21 — **Seminar on HyperCard Programming** (Santa Clara, Calif.)
Sponsored by the Software Entrepreneur's Forum, this is the first technical seminar for stackware developers. It will focus on the HyperTalk environment, Apple's product strategies, interface routines, communications, and command and function strategies. Dan Winkler and Danny Goodman will attend. Contact: SEF at (415) 854-7219.

DECEMBER

1-3 — **Optical Information Systems** (New York)
Sponsored by Meckler Publishing, the conference will include technical seminars and vendor exhibits on CD-ROM, WORM technology and erasable optical disks. There will be three pre-conference technical tracks Nov. 30. Contact: Marilyn Reed at (203) 226-6967.

5 — **MacMusic Fest 1.0** (Los Angeles)
Filmsonix Inc., a Record Plant affiliate, will sponsor this exhibit and conference for the personal computer and music industries. Apple, musical instrument manufacturers and music software vendors such as Digidesign will attend. Bill Atkinson and Steve Wozniak have tentatively scheduled appearances. Contact: Peg McAffee at (213) 468-5427.

7-8 — **Datapro's Electronic Publishing: Strategies, Applications and Systems**
Two-day course aimed at corporate users on how to apply electronic publishing while boosting productivity and cutting costs. Contact: Datapro Research at (800) DATA-PRO.

7-9 — **National Connectivity Symposium** (Washington)
Symposium will include a one-day seminar on installing and using local-area networks, and two days of demonstrations with 50 vendors of connectivity products. Contact: Digital Consulting Associates at (617) 470-3870.

8-10 — **DEXPO West '87** (Anaheim, Calif.)
Hundreds of vendors will exhibit hardware, software, systems and services compatible with Digital Equipment Corp. computers. The Apple-DEC Computing Center will feature Apple and about 20 third-party vendors of Apple-to-DEC connectivity products. Contact: Expoconsul International at (609) 987-9490.

16-18 — **1987 AEC EXPO** (New York)
Aimed at architects and engineers, the show, which is not affiliated with the A/E/C Systems show, will have products for automation, management and reprographic systems. Contact: Expoconsul International at (800) 433-0880.

Send calendar events to: Clair Whitmer, MacWEEK Calendar, 525 Brannan St., San Francisco, Calif. 94107.

14V"/15" Monitor for the Apple Macintosh II

How to Flatten an Apple

The *FHF3500K* from Mitsubishi Electronics is a 14V" flat square color monitor fully compatible with the Apple® Macintosh™ II. Make the move to Mitsubishi® today for all your Macintosh II needs.

- Flat square screen for better viewability
- Apple mode: 640 x 480 resolution
- Readable full-page text using Aldus Pagemaker
- Tilt and swivel base available

Mitsubishi Electronics America, Inc., Computer Peripherals Division, 991 Knox Street, Torrance, CA 90502. Telephone: (213) 515-3993, ext. 382.

MITSUBISHI ELECTRONICS

Apple is a registered trademark of Apple Computer, Inc.

Of Macs and masterpieces

Macintoshes assist with the task of making the Louvre's art collection more accessible to its multinational visitors

The Mac was used to produce architectural drawings and the typeface GranLouvre as part of a project to guide visitors through the Louvre in Paris.

RONALD ROMERO

Ronald Romero, a free-lance designer, taught the designers for the Louvre project how to use the Mac.

RICHARD LEE

The people behind the Louvre's new system for directing visitors are Ken Carbone, director of the Louvre project for Carbone Smolan (left); Barbara Kuhr, senior designer; and John Plunkett, senior project designer.

BY ELINOR CRAIG
MacWEEK Staff

NEW YORK — At the Louvre hundreds of thousands of visitors shuffle through myriad rooms searching for the "Mona Lisa." Built as a royal palace, the Paris museum is ill-suited as a repository for one of the largest and most prestigious art collections in the world. Since art was first publicly displayed in the chateau in 1793, collections have shared the space with military, royalty and the government. Problems have always existed, but now the public traffic has reached proportions that cannot be ignored.

Commissioned by the French government, architect I.M. Pei and designer Ken Carbone have come up with a solution that has two main facets. The first is structural — a controversial modern glass pyramid that now stands in the Cour Napoleon as the new entrance and information center. The second is a system of signs, all designed on the Mac, to identify works of art and to inform, regulate and direct the flow of visitors through the museum.

Many in the art and design worlds still look at the Mac with skepticism, but that attitude is beginning to change. The directors of the Louvre have opened their arms wide to the Mac.

Carbone, a principal at the Carbone Smolan design firm in New York, won an international competition for the chance to design a system directing people through the Louvre and to create an identity that would remain consistent throughout the palace. Thousands of rooms had to be labeled and directions coordinated and the information had to be understood by the Louvre's multinational visitors. The project "had such magic and power even though it was the largest one we have ever tackled," said Carbone, director of the Louvre project for Carbone Smolan. "I can't imagine doing this kind of project without a computer."

To complete the project in the allotted time, Carbone hired consultants and designers to help execute his ideas. Notified he was the winner in December 1986, Carbone completed his part in less than 10 months and handed it over to the French team in late October.

John Plunkett, senior project designer and Barbara Kuhr, senior designer, were hired as the Paris staff. Ronald Romero, a free-lance designer and Macintosh guru was hired to train the designers on the Mac and to coordinate the many disparate elements of the project.

"Ron was like a missionary from the West bringing the good word," said Plunkett about Romero's involvement with the Paris staff. "We cut our time down by a third using the Mac." Neither Plunkett nor Kuhr had used a Mac before this project.

The logistics of on-line transatlantic communication challenged Romero's technical skills. "Different electrical currents and measurement standards made communications erratic and programs behave abnormally," Romero said.

See LOUVRE, Page 20

We wrote the catalog on laser printing.

This spring, a company called Laser Connection introduced a new concept to laser printing.

It didn't come in the form of hardware, or software.

Instead, it came as a book. A catalog, actually.

Titled *The Sourcebook*™, it brought together for the first time the full array of products available for laser printing and desktop publishing.

Printers. Controller upgrades. Sheet feeders. Scanners. Monitors. Type fonts. Plus notes, articles and how-to's that help you make the most of your laser printing system.

A collection of best-sellers *The Sourcebook* committed to paper what Laser Connection has been doing quite successfully for some time. That is, working with top manufacturers to give you laser printing solutions that offer greater performance, convenience and cost savings.

Granted, we had some help. Laser Connection is part of QMS, a recognized leader in the development of intelligent printing systems. So teaming with their 10 years of print technology experience, we can give you products that take in all the latest advancements. That's why the QMS KISS® laser printer and PS Jet™ PostScript controller kit were voted best of 1986 by PC Magazine. And why we can offer the widest range of Adobe PostScript® products anywhere, products that time and again have been chosen by industry experts as best in their class.

Where to find our guide in the field
Laser Connection products are available from selected dealers throughout the country. For the location nearest you, or for your own copy of *The Sourcebook*, call **1-800-523-2696**.

LASER CONNECTION™

A QMS® Company

QMS, KISS, Laser Connection are trademarks of QMS, Inc. PostScript is a trademark of Adobe Systems, Inc.

The Sourcebook™
Innovative Laser Printers & Desktop Publishing Products From The Laser Connection® & QMS®
• Hardware
• Software
• Upgrade Kits
• Accessories
PLUS • Helpful Information to Increase Your Understanding of Laser Printing & Desktop Publishing

©1987 Laser Connection.

LOUVRE

Continued from Page 18

"With Red Ryder, we linked MCI mailboxes to large mainframes in Paris and New York, solving the problem of communication between the two offices," he said. Separated by the Atlantic Ocean, each office called a local number to access the electronic mailboxes.

"Another graphic strength of the Mac was that it consolidated so much footwork. Given the time frame, we couldn't wait for a typesetter. We could put a design into the Mac and two minutes later have it in front of us to refine," Kuhr said. The Mac sidestepped the process of getting type, showing it to the client, modifying it and taking it back to the typesetter, a process that can be even more difficult in a foreign city.

"This project dwarfs any other by the complexity and number of details," Plunkett said. "It was hard to see the forest for the trees and at the same time reduce the project down to one component, not missing a single detail. This is where the Mac was crucial."

The setup was not without difficulties, according to Kuhr. "There were many system bombs," she said. The disk that was written in New York would be scrambled when used in France. The MCI mailboxes, which eliminated the problem, arrived late in the project after months of difficulties with modem-to-modem connections.

From typography and design grids for all the signs to finances and contracts in English and French, the work was funneled through the Mac.

With MacDraft and MacDraw, Romero created grids for type placement on signs. "This was the key to the success of the project," he said. "The type could be laid out electronically on roughs in the computer. Then the grid could be dropped out, printing only the type. This saved thousands of dollars in both staff time and materials."

"The most challenging problem was how to develop a sign for a moving target," Carbone said. "Every collection or piece of art will change location within the next 10 years."

Because the solution could not be coordinated according to the art, the team had to prepare a system that could change with the collections. The spirit of Paris inspired Carbone's design. Inasmuch as Paris is broken into various districts, Carbone viewed the museum as groups of neighborhoods, with streets and addresses — art can move, as people can, but the address stays the same.

"We had to prepare a printed document that could change with the collections. That solved 50 percent of the problem," Carbone said. The design avoided words whenever possible. For example, according to government statistics, 70 percent of visitors want to see the "Mona Lisa," so in the guide next to a picture of the masterpiece, there would be a map with an "X" marking the appropriate room. The concept's graphic orientation provided a universal language for informing visitors and helped coordinate the details of the information system.

The Mac also played a vital role in the project's organization and management.

A chart created with Aldus' PageMaker tracked the weekly progress of each of the project's 20 or so factors. Different colors were assigned to distinguish jobs.

Tree charts, created with Living Videotext's MORE, kept track of bureaucratic details. Billing forms and finance reports had their own letterhead, designed and charted with PageMaker to keep them distinct from other office paperwork.

Designing documents for two purposes saved time and maintained consistency. The "Book of Standards," created with PageMaker, detailed the graphics and text for each sign category. It became the fundamental reference for all team members. In addition, the book detailed the project so well it was used to present the roughs to the French government.

Each page was designed with three information blocks that were graphically distinct and could be altered or moved separately from the rest of the page. A storyboard, also done in PageMaker, showed the path of the system — a representation of each type of sign and the way it was linked with another sign, information desk or video display.

"We developed a font in Fontographer, GranLouvre, an electronic translation of the typeface Granjon," Romero said. The finished product was an elegant type used throughout the project to keep the presentations cohesive.

The design team created a sign system that would inform visitors and move them through the museum. Pei started this by simplifying the entrance. Carbone took the baton and continued with a streamlined plan that uses the Mac to create graphics that override language differences and provide universally understood communication. ■

WELCOME TO MACFAIR!

I ♥ NY

THE COMPUTER FACTORY®
Authorized Dealer

From The COMPUTER FACTORY
the Northeast's #1 Apple® Dealer

For Corporate Sales call Alan Brody at (212) 968-0100 or a store near you:

MANHATTAN
East Side 485 Lexington Avenue (212) 687-5219
Westside 11 West 52nd Street (212) 664-0170
Wall Street Two Broadway (212) 344-0733
Maiden Lane 100 Maiden Lane (212) 968-0100

LONG ISLAND
Brooklyn 2498 Flatbush Ave. (718) 377-4999
Rego Park 96-66 Queens Blvd. (718) 896-0700
Garden City 1301 Franklin Avenue (516) 248-6700
Huntington 516 Walt Whitman Rt 110 (516) 351-8460
Hauppauge 367 Nesconset Highway (516) 360-7700

MASSACHUSSETTS
Boston 660 Summer St. (617) 348-2911
Cambridge 991 Massachussetts Ave. (617) 661-4520
Framingham 50-60 Worcestor Rd (617) 879-4955
Burlington 84 Mall Rd. (617) 270-6780
Springfield 1109 Boston Post Road (413) 782-9974
Downtown Boston 106 Milk St. (617) 542-4554
Cranston RI 1305 Oaklawn Ave. (401) 463-5604

CONNECTICUT
Stamford 184 Summer Street (203) 356-1920
Hamden 2165 Dixwell Avenue (203) 281-4119
Danbury 71 Newton Road (203) 798-1555
Westport 1460 Post Road East (203) 255-2822
Hartford 20 Church St. (203) 724-6795

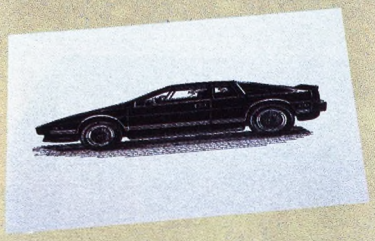
NEW JERSEY
Paramus 501 Rt. 17 South (201) 599-2700
East Hanover 240 Rt. 10 (201) 887-5711
Totowa 580 Route 46E (201) 785-0088
Woodbridge 675 Route 1 (201) 750-8810
Union 2456 US Route 32 (201) 686-4555
Cherry Hill Cherry Hill Center, Rte 38 (609) 667-3003
Princeton 150 Rte. 1, Lawrenceville (609) 520-0095

WESTCHESTER/ROCKLAND
Nanuet 428 Nanuet Mall South (914) 624-8006
White Plains 169 Main Street (914) 681-6060
Yonkers 2361 Central Park Avenue (914) 793-1 300

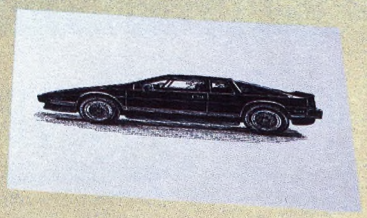
WASHINGTON, D.C.
Washington, D.C. 5101 Wisconsin (202) 686-9334
Vienna, VA 8150 Leesburg Pike (703) 749-9120
Arlington 2113 Crystal Plaza Arcade (703) 892-9350
Fairfax 11011 Lee Highway (703) 278-8787
Silver Springs 8437 Georgia Ave. (301) 588-4222

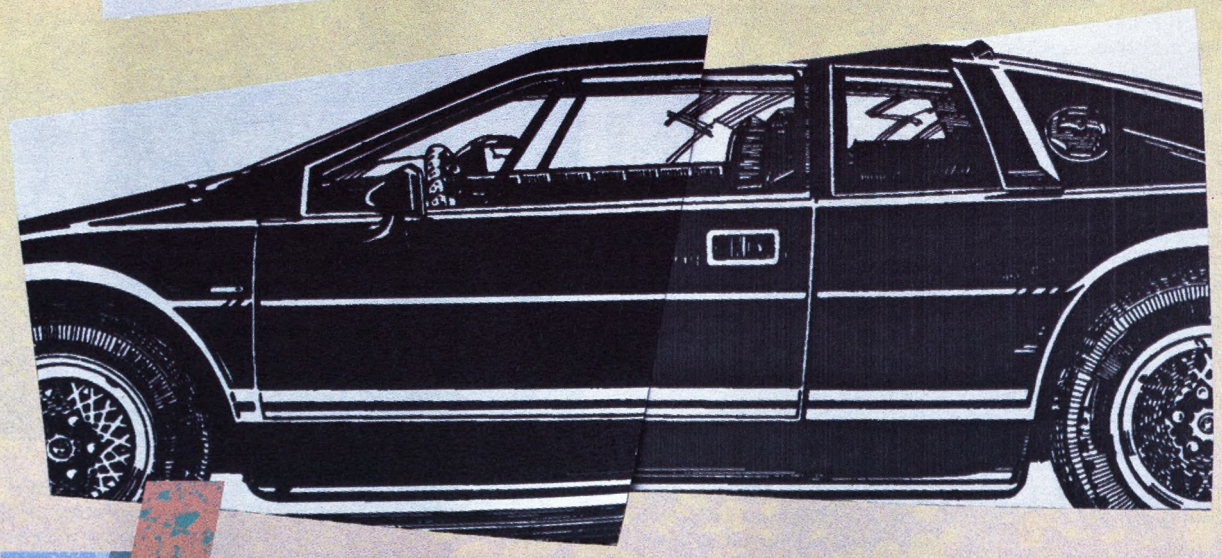
PENNSYLVANIA
Philadelphia 1624 Chestnut St. (215) 977-9302
Pittsburgh 531 Smithfield St. (412) 355-0101
Monroeville 4099 William Penn Hwy (412) 856-1880
Allentown 2617 MacArthur Rd, Whthll (215) 770-1536
King of Prussia 500 Chester Brk Bvd (215) 640-1800
Jenkintown 449 Old York Road (215) 885-5061

UPSTATE NEW YORK
Kingston Route 9W Kings Mall (914) 336-4155
Albany 1492 Central Ave. (518) 869-3818
North Syracuse 215 Main St. (315) 458-8930
Whitesboro 99 Commercial Rd (315) 768-8151



These unretouched print samples show the superior print quality of QMS-PS 810 over printers using first-generation print engines.





ntroducing the PostScript laser printer that blacks out at high speeds.

The new QMS-PS® 810 can compose and print the most complex pages in record times, with richer, more saturated blacks than ever before. All with the desktop publishing power of Adobe PostScript®, and the superior print know-how of QMS, an industry leader.

Under the hood QMS ASAP™ (Advanced System Architecture for PostScript) is proprietary technology that helps eliminate the hardware bottlenecks that hinder other PostScript printers. As a result, QMS-PS 810 boasts processing speeds remarkably faster than other PostScript printers in its class. And faster output means greater productivity. In addition, the QMS-PS 810 laser printer's new Canon® SX® print engine covers solid areas and prints fine detail better than previous-generation engines.

The new 8-page/minute QMS-PS 810 laser printer

Fast start, strong finish You can adorn your documents with one or all of the 35 Adobe typefaces. Thanks to PostScript, there's an infinite number of font variations available. You can also make type as large or as small as you want. And put it anywhere on the page. In fact, with PostScript you enjoy total control over the design of your page. It gives you the complete desktop publishing power to do things that would otherwise be virtually impossible. So you get high-quality output exactly how you want it.

Along with PostScript, the HP LaserJet+™, Diablo® 630 and HP-GL™ printer emulations are added for your non-PostScript software.

The QMS-PS 810 laser printer is easy to use, maintain, and comes with a one-year warranty. It's available from Laser Connection dealers. Laser Connection is a sales and marketing subsidiary of QMS. For the dealer nearest you call **1-800-523-2696**.

LASER CONNECTION™

A QMS® company

©1987 Laser Connection

The following are trademarks of their respective companies: QMS, QMS-PS, ASAP, Laser Connection of QMS, Inc. PostScript of Adobe Systems, Inc. Canon, Canon SX of Canon, U.S.A. LaserJet+, HP-GL of Hewlett-Packard. Diablo of Xerox Corp.

Not just another pretty typeface

BY CLIFF LEHMAN
MacWEEK Staff

SAN FRANCISCO — Laughter comes easy and often as Roger Black plays with the design of a brochure for the advertising department of Trips magazine. Sitting in front of a Mac SE with a large monitor, he playfully experiments with different fonts, changing sizes and kerning in search of a pleasing combination.

Black is much sought after for the style and grace he brings to his design work for major magazines and newspapers on both coasts.

The bi-coastal designer shuttles between New York City and San Francisco, maintaining offices and households in both cities.

> "The important thing is that you are at the controls; there are no intermediaries. It's like having your own press."
>
> **ROGER BLACK, designer**

Black is currently designing Trips magazine, a travel quarterly to be launched by Banana Republic, a retail clothing store, in the spring of 1988. He is also a design consultant for the San Francisco Examiner and for Aviation Week in New York.

Black, 39, has been designing for publications since he was a student at the University of Chicago.

He designed a new format for Newsweek in 1985 and continues to work for the magazine as its type consultant. His design for Newsweek included a stronger logotype to give the cover a new look. Working with California type designer Jim Parkinson, Black also created a typeface, called Newsweek No. 9, for inside headlines.

Among his other projects, Black is working with Sumner Stone, director of typographical staff at Adobe Systems Inc. of Mountain View, Calif., to develop original typefaces for the company's font library.

As a brochure's pages come out of the LaserWriter, Black grabs them impatiently. "It's rather heavy handed in bold; the word spacing is too loose — TooLoose Lautrec," he said, resuming his seat in front of the SE.

Black scrolls through the list of available typefaces and variations. It is a long one by desktop publishing standards, but he complains about the limited choices.

Although at times frustrated with the limitations of desktop publishing technology, Black promotes the new technology as the future wave — even for design and type professionals, many of whom are not so open, Black said.

CINDY CHARLES

Black was the director of Type 1987, an international conference for graphic and type designers held in New York last month. In a newsletter concerning the conference he wrote:

"There are a lot of limitations: few fonts, limited spacing refinements, fairly crude typographical controls. But you can work around most of these failings. The important thing is that you are at the controls; there are no intermediaries. It's like having your own press." ■

Helping the Mac speak in hieroglyphics

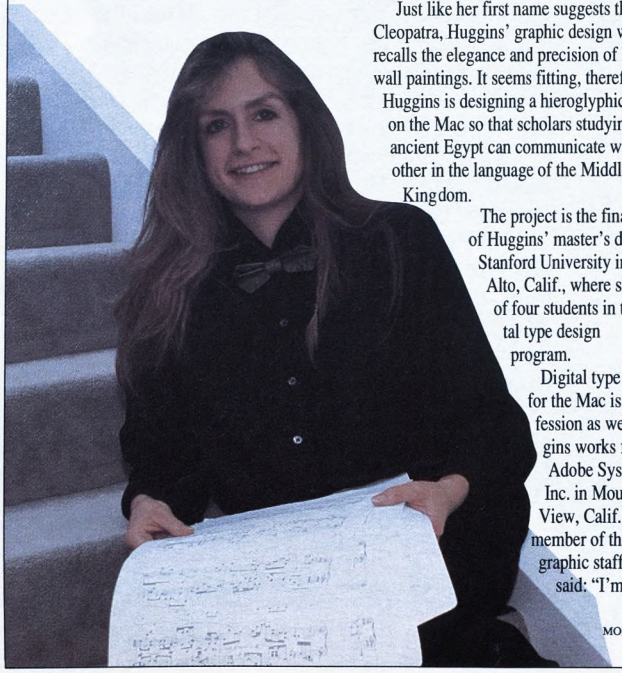
BY PRISCILLA BURGESS
Special to MacWEEK

PALO ALTO, Calif. — It doesn't take a psychic to see the connection between Cleo Huggins and the ancient Egyptians.

Just like her first name suggests the queen Cleopatra, Huggins' graphic design work also recalls the elegance and precision of Egyptian wall paintings. It seems fitting, therefore, that Huggins is designing a hieroglyphics font on the Mac so that scholars studying ancient Egypt can communicate with each other in the language of the Middle Kingdom.

The project is the final stage of Huggins' master's degree at Stanford University in Palo Alto, Calif., where she is one of four students in the digital type design program.

Digital type design for the Mac is her profession as well. Huggins works for Adobe Systems Inc. in Mountain View, Calif., as a member of the typographic staff. She said: "I'm really a type hygienist. We buy the rights to the typefaces, then I go in and clean up all the glitches between the lines and curves so the typeface comes out nice and clean."



MONICA LEE

Huggins' task is to maintain the integrity of the original typeface when the fonts are converted from spline data, an outline format in which Adobe leases the fonts from their owners, to the Bezier format used by PostScript. The Bezier format makes it possible to stretch and distort the original shape of the letters to create interesting and unusual letter shapes.

While Huggins has worked on most typefaces as part of a team effort, she is highly regarded as the designer of Sonata, Adobe's music font. Huggins was originally hired as a graphic designer, but she soon moved to the typographic staff.

Unlike most of Adobe's fonts, Sonata had to be designed from scratch. Huggins was uniquely qualified for the task since she is an accomplished violinist as well as designer. After studying music notation styles, which differ from country to country and have changed over time, Huggins said: "I finally decided that the best indicator of a good font was its legibility. Some of the older notations were ornate and beautiful, but hard to read."

Sonata was created before any music applications were on the market for the Macintosh. Huggins had to anticipate users' needs. The multitude of music programs that now use Sonata attest to her good judgment in designing the font.

Huggins' ability to work with both the creative and technical sides of type design reflects her background. Huggins' mother is a professional photographer. Her father is a physics professor at Dartmouth College in Hanover, N.H., and high-order mathematics was treated like the family pet. Exposed to mathematical theories, Huggins came to realize that math could describe reality as well as art.

"At dinner, my father could magically change a plate of spaghetti into a model of vortices," said Huggins. "I knew that when he was at work he used mathematics to describe the same thing, so I grew up with the awareness that computers and math could illustrate reality, just as my mother's photography did."

As a professional photographer, Huggins' mother encouraged her interest in art, and as a result, Huggins went to the Rhode Island School of Design in Providence, R.I., where she received a bachelor's degree in graphic design. Before going to graduate school at Stanford, Huggins taught art at the Portland School of Art in Portland, Maine.

Her involvement with the Macintosh came with her move to California. Until then, Huggins had used computers to calculate the mathematics of her designs like, for example, the shape of the hull for a yacht she designed, but never as an art tool.

Regarding the Mac as an art tool, Huggins said: "You can't think of the Macintosh as a replacement for drawing with paper and pen. You have to think of it as a new tool with its own unique characteristics, as a tool for abstraction and communication." ■

A guide to the care and feeding of your laser printer.

Get the best advice on the care of your laser printer from Laser Connection—one of the world's leading suppliers of laser printers and desktop publishing accessories. Our dealers carry many of the latest products that enhance the value and productivity of your printer.

Feeding time Decrease your laser printer's daily feedings with the PaperPlus 500™ sheet feeder. Its greater paper handling capacity increases the continuous operation of your printer from 12½ minutes to one hour, leaving your office staff to more important work than feeding the printer.

PaperPlus 500 Sheet Feeder

The PaperPlus 500 can accommodate a varied diet of envelopes and letter-size paper, and is compatible with all Canon® CX® laser printers, including the QMS-PS® 800+, Apple® LaserWriter™, and the HP® LaserJet™.

Scan this The IS-300™ sheet-fed scanner transfers any text, illustration, art, or photograph into your computer. You then have full control to manipulate the entire image with your PC and software. Combine scanned images with text to create reports and newsletters. You save time, get graphics flexibility, and increase your desktop publishing power. The IS-300 scanner is compact, lightweight, and works with an IBM® PC/XT/AT®, PC compatible, or an Apple Macintosh™.

IS-300 Sheet-Fed Scanner

Colorful language Besides basic black, Laser Connection offers toner cartridges with blue and brown toner. Our dense, high-quality toner insures full, even coverage in whatever color you choose. And our toner cartridges work with any laser printer that uses a Canon CX print engine.

Black
Brown
Blue

Toner Cartridges

A valuable alternative Don't trash your laser printer's empty toner cartridge. Refill and recondition it with the Laser Connection's Toner Refill Certificate Program. You'll save about half the cost of a new toner cartridge. And while other programs can promise savings, they lack the expertise of Laser Connection. Expertise that guarantees you quality. Each reconditioned cartridge is refilled with more toner than it started with. So you save money, and you get a cartridge that lasts longer, satisfaction guaranteed, or we'll give you a free replacement certificate. Only at participating Laser Connection dealers.

Call **1-800-523-2696** for the Laser Connection dealer nearest you. And be sure to ask for *The Sourcebook*™—our exclusive catalog filled with the latest laser printer products and enhancements.

LASER CONNECTION™

A QMS® Company

The following are trademarks of their respective companies: QMS-PS, Laser Connection of QMS, Inc. Canon, Canon CX of Canon USA, Inc. Apple, LaserWriter, Macintosh of Apple Computer, Inc. HP and LaserJet of Hewlett-Packard. IBM PC/XT/AT of International Business Machines Corp.

©1987 Laser Connection.

Now is not the time to cut back on computers

It has been charged that personal computing has a dirty, little secret: Despite a billion-dollar investment in office computers, American business has realized no measurable gains in office worker productivity.

Paradoxical as it seems, the charge carries some truth. With traditional measures of worker productivity — the ratio of hours worked to work output — most management experts are at a loss to ascribe any benefits to the introduction of office computers.

Fear of recession in the wake of last month's stock market crash is bound to renew the debate over computer payoff. In the climate of an economic slowdown, hard-nosed financial controllers at many companies will seize on such reasoning to cut back office computer spending, including the Macintosh.

That would be exactly the wrong response. Personal computers may not make office workers more efficient if efficiency is measured as more paperwork per hour. They do make workers more effective by allowing them to focus on significant functions that bring fundamental, though hard-to-measure, benefits to the company. During a time of slower growth, companies should look for pound-wise gains in effectiveness, not penny-foolish savings in a quest for empty efficiency.

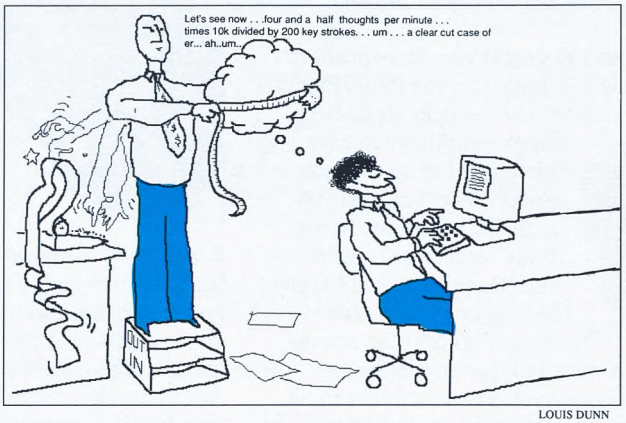
Measuring the productivity of white-collar workers is hard to do because the units of output are difficult to identify. A successful worker or manager has good ideas, makes fruitful decisions or exhibits the qualities of a good leader: intangible attributes. Those trying to quantify white-collar productivity must rely on measures such as the number of reports produced or meetings attended.

But reports and meetings can be meaningless. If a report has no value to the company, why measure whether computers allow more of them to be produced? What matters is the report's content. If it contains fresh insights that a company uses to make a decision, ultimately producing greater revenues, then the report obviously is significant. If it's rote paperwork, it is not.

Office computers can help companies identify strategic opportunities that improve their competitive advantage, according to David Shay of Peat Marwick Main, who developed an alternative methodology to measure benefits. Shay's 80-20 OA method identifies the 20 percent of computer applications that have 80 percent of the impact on companies' underlying missions.

In a recent study of 16 companies, Shay found that Mac users realized productivity gains 15 percent to 25 percent greater than users of other computers. "In most case studies, management has leveraged the productivity gains from Macintosh into strategic and competitive advantages," the report says.

Corporate computer managers and financial officers should pay close attention to Shay's results. Now is not the time to cut back drastically on personal computers. If there's an economic downturn coming, computers like the Macintosh that encourage creative thinking are needed more than ever. ■



LOUIS DUNN

To The Editor

Another reason to rent software

Neither of the opinions expressed on your editorial page of the Oct. 27 issue under the title "Does renting software lead to illegal copying?" mention one significant reason to allow software rental: when one only needs a piece of software occasionally.

I am normally very satisfied with the graphics that come with the standard spreadsheet products. But occasionally if I need to make a particularly "spiffy" presentation, it is useful to avail myself of a graphics presentation package. Other useful packages that I do not need often enough to justify purchasing are CAD/CAM, desktop publishing and project management. I'm sure others would have similar but varying lists.

Gerry Rovelsky
Systematics Inc., Boston, Mass.

Review rebuttal

Please permit me a few quibbles with the review of PowerStation 1.1 and the sidebar on Oasis 2.0 (Oct. 27). I have not been able to reproduce (nor has any user reported) "strange behavior" when using PowerStation with Desk Accessories. The review reports "No flexibility in button design and layout," but the text cites several kinds of flexibility, including the ability to rename buttons, which Oasis doesn't offer.

The summary says "no color" (on a Mac II) for PowerStation, and the sidebar says, "You can select the color of Oasis' background screen." But PowerStation's background is whatever pattern, including a color pattern, the user has specified in the Control Panel, while Oasis' background is limited to one of the eight "old QuickDraw" colors. The review accurately cites PowerStation's minor problems with MultiFinder, but the sidebar neglects to report that Oasis is not usable with MultiFinder.

Steve Brecher, CEO
Software Supply, Sunnyvale, Calif.

Send letters to MacWEEK, 525 Brannan St., San Francisco, Calif. 94107; or via MCI Mail to MacWEEK. Include your name, title, company name, address and phone number.

Traveling with a Macintosh can be done

VISIBLE RESULTS

Steve Rosenthal

Portability has never been the Mac's strong suit, but that doesn't mean traveling with a Mac can't be done. Even without a pricey Dynamac or Colby Mac transportable machine, it is practical to take a Mac on the road. A truly portable Mac would be the best solution, but it doesn't appear we're going to get one from Apple or anyone else yet. Between technical barriers and Apple's marketing strategy, making a laptop Mac is a lot harder than making one similar to that other personal computer.

The Dynamac and the Colby, currently the most similar choices, don't fill that get-up-and-go niche, although they do have their uses. Both are essentially standard Macs repackaged for easier transporting, so they need AC power. They also weigh just about as much as or more than a Mac and cost as much as a Mac plus the cost of the conversion.

For the rest of us, that means that we take the Mac as it is, and work around any traveling limitations.

For a start, you have to have a case. Without a case, traveling with a Mac is virtually impossible because the mouse and keyboard don't fit neatly into the main unit (a problem even when moving the machine from room to room). An official Mac carrying case works best, but usually you can get by with any padded bag of the right size. If you don't use a customized case, pay attention to how the parts nestle together. The metal shells on the connectors on the back of the Mac can cut into either mouse or keyboard, and a loose mouse can break the screen.

The disk drives also need protection. If you still have the yellow plastic disk drive protectors that came with your Mac, load them in before traveling to keep the two sets of disk heads in each drive from bumping into one another. If you don't have the protectors, you can use a scrap floppy disk. But be sure not to use that disk for programs and data after that because the motion of the head may dig invisible gouges on the disk.

On most airlines, a Mac in a case will fit in the overhead compartments (and even meet the 40-pound maximum article weight restriction). My experience has been that on some planes, a tightly cased Mac will fit under an aisle or middle seat — but it's generally a no-go for the storage space under the window seat or for Macs in substantial coverings.

You'll hear a lot of claims both ways on whether the X-ray or magnetic security screening will hurt your Mac or erase data on disks. Some airports will let you pass a Mac around these machines for hand inspection, but often you have no choice but to let your Mac pass through the machines.

Theoretically, X-rays or even the weak magnetic fields in the metal detector could change a bit on a disk that was already on the edge. Or an X-ray generated particle in a chip could permanently stick a logic gate or memory bit that was already marginal. But in both cases, you are just slightly advancing a failure already happening and one that is more likely to be triggered by the far-more-energetic cosmic rays that constantly bombard the earth or by the natural background radioactivity.

I figure, too, that these days almost every consumer electronic product has a microprocessor in it, and with the millions of units going through screening every month, it would be evident by now if these measures caused any real problem .

The biggest danger for disk data is static discharge. If you hand over your disks for direct inspection in a carpeted hallway where the relative humidity is low and you and the inspector touch directly or via the metal shutter, you both may get a jolt. You'll quickly recover, but your disk could lose some data. Apparently, the motors that run the belt through the X-ray machine occasionally can be a problem if your disk gets too close. So if I put my disks through, I try to give them some protection by packing the disks in the middle of my bags.

If you're traveling by car, remember that temperatures inside an auto with closed windows can reach levels that will damage electronic components and soften plastics. As one of my friends put it, "I wouldn't even treat a dog like that." ■

THE LONG VIEW

Lawrence Magid

On March 2, the same day Apple announced the Mac SE and the Mac II, AST Research said it was developing boards to make the new machines compatible with the MS-DOS operating system.

The SE board is still vaporware, but the '286 board for the Mac II is now shipping.

As an old PC hacker, I was right at home testing the Mac286. All my old friends were there, including such venerable DOS commands as CHKDSK, DIR and EDLIN. And, yes, Lotus 1-2-3, WordStar and WordPerfect ran just fine, thank you. With MultiFinder, it's even possible to have an MS-DOS program running in one window alongside Macintosh programs in other windows.

However, I am left with a burning question. Why? Running IBM PC programs on a Mac is a bit like playing vinyl records on a CD player.

Sources at AST and Apple have admitted that Apple helped subsidize the board's development. It's one of those strategic products that is more important on paper than in reality. For some corporate and government users, MS-DOS compatibility is a must. Now you can check that one off when considering a Mac II.

I don't know about anyone else, but I don't have any desire to run MS-DOS software on my Mac. Sure, I like Lotus 1-2-3, but I like Excel better. And, yes, the PC version of Microsoft Word is a great word processing program, but the Mac version is even better. For almost every major category of IBM PC software, there is a Macintosh equivalent. And often it's a superior program.

There are some exceptions, of course. For the most part, however, they are so-called vertical market products aimed at a small segment of the user base.

There also is the "desk space" argument for those who need both a PC and a Mac. The Mac II with a '286 does free up valuable desk space. But it wastes two slots in the Mac II and eats up at least 2 Mbytes of Apple hard disk storage. For the cost of the board and required PC-compatible disk drive, you could easily buy an AT clone with its own color monitor and a 20-Mbyte hard disk.

I'm not minimizing compatibility. We live in a mixed world, dominated by IBM PCs and their clones. Exchanging data with those machines is essential for the Mac's survival in business. But there are many ways to do that.

Data compatibility is usually pretty straightforward. Excel and other Mac spreadsheets can read and create Lotus 1-2-3 files. There are Mac database programs that can read and write dBASE III files. Virtually any word processing program on either machine can create and understand text files from the other. There are even ways to exchange some graphics files.

Then there is the issue of moving the data. The disk drives are totally incompatible.

TOPS was an early solution. It links Macs and PCs into a LAN via AppleTalk. MacLink Plus from DataViz is another approach. It consists of a cable to link the two machines' serial ports and a communications and translation program on each end. The translators automatically convert the files between popular formats on both machines. I used it recently to translate a PC dBASE III file into one that could be used with FileMaker on the Mac. No problem.

If you are doing a lot of transfers, I recommend DaynaFile from Dayna Communications of Salt Lake City. The product, which plugs into the Mac's SCSI port, consists of a 5.25-inch and an optional 3.5-inch IBM compatible disk drive. When you insert a PC disk into the drive, the Mac treats it just as if it were a Mac disk. Files are copied between the DaynaFile PC drives and those in the Mac by clicking and dragging. You can even load and save files directly, just as you can with a Macintosh drive. I had the product unpacked, plugged in and working successfully in less than 10 minutes without looking at the manual. It comes with the same translation software as Mac Link Plus. It's easy, effective and relatively fast.

As an option, you can buy it with both a 5.25-inch and a 3.5-inch PC compatible drive. I carry an MS-DOS Toshiba laptop when I travel, and I was able to use DaynaFile to move files between the 3.5-inch Toshiba disk and the Mac.

Ironically, the Mac and DaynaFile solved my peculiar MS-DOS problem of finding a way to transfer my IBM PC software and data to the Toshiba. ■

So did these.

These presentation slides cost $200.

There's a new way to make stunning presentation slides for a fraction of the cost, in a fraction of the time, right in your office.

It's called ImageMaker.™ And it makes creating presentation slides as easy as showing them.

Produce a $100 slide for 50 cents.

With overtime charges, the simplest image from a slide service can

ImageMaker works with the Apple® Macintosh,™ and popular desktop presentation software.

easily run $100. But with ImageMaker, the most you'll pay for a high-quality slide is around 50 cents—the cost of film and processing.

Produce a wide range of graphs and charts.

Get finished slides in hours instead of days.

With ImageMaker you can produce an entire presentation, from idea to projector-ready slides, in under four hours. And it's so easy to use that you, or anyone else, can quickly design professional-looking slides.

Project the best image possible.

Choose from many typefaces.

ImageMaker slides are twice as sharp as most professional service bureau slides. And it allows you to work with a full range of brilliant foreground and background colors, three shading patterns, and your choice of many typefaces.

Call 800-255-4574 (ext. 352)* for free sample slides.

Also get our literature kit and a demonstration. Start making your slide presentations sharper, faster and less expensively.

It'll turn you into a screen star overnight.

ImageMaker™

PRESENTATION TECHNOLOGIES
743 N. Pastoria, Sunnyvale, CA 94086 408-749-1959
*Inside California, call 714-545-2774 (ext. 352).

The following are trademarks of the companies listed: ImageMaker, Presentation Technologies, Inc.; Macintosh, Apple Computer, Inc. Apple is a registered trademark of Apple Computer, Inc.

Executive Wish List

SOFTWARE

NCP denotes not copy-protected.
CP denotes copy-protected.

Aegis Development ... NCP
Doug Clapp's Word Tools ..... $42.
Affinity Microsystems ... NCP
AffiniFile *(DA filer)* ..... 49.
Tempo *(power user's macro utility)* ..... 54.
Allan Bonadio Associates ... NCP
Expressionist *(equation processor)* ..... 52.
ALSoft ... NCP
DiskExpress *(maximize disk performance)* 26.
Altsys ... NCP
FONTastic Plus *(advanced font editor)* .... 48.
Fontographer *(Laserwriter font editor)* ... 243.
Ann Arbor ... NCP
FullPaint *(advanced Paint program)* ..... 49.
Ashton-Tate ... NCP
dBASE Mac 1.0 *(relational, req. MacPlus)* 299.
Batteries Included ... NCP
Thunder! 1.23 *(spelling checker)* ..... 31.
Berkeley System Design ... NCP
Stepping Out *(requires 512k)* ..... 55.
Blyth ... NCP
Omnis 3 Plus *(multi-user available)*..... call
Borland International ... NCP
Turbo Pascal Tutor ..... 49.
Turbo Pascal *(HFS compatible)* ..... 59.
Numerical Methods Toolbox ..... 59.
Sidekick 2.0 *(includes MacPlan)* ..... 59.
Reflex *(while supplies last)* ..... 59.
Reflex Plus *(relational database)*..... 165.
BrainPower ... NCP
Graphidex *(DA graphics organizer)* ..... 65.
Designscope *(electronic circuit design)* .. 128.
MathView Professional *(num. analysis)*... 149.
StatView 512+ *(req. external drive, 512k)*... 178.
Bravo Technologies ... NCP
MacCalc *(easy to use spreadsheet)* ..... 79.
CasadyWare ... NCP
Fluent Fonts *(two-disk set)* ..... 28.
Fluent Laser Fonts *(Vols. 1-15)* ..... *each* 46.
CE Software ... NCP
Disktop 3.0 *(powerful DA Finder)* ..... 32.
QuicKeys *(keyboard shortcuts)*..... 69.
Challenger Software ... NCP
Mac3D *(3D graphics, CAD features)*..... 127.
Chang Labs ... NCP
Rags to Riches Led., Pay. or Rec. ..... 123.
Rags to Riches 3 Pak ..... 299.
The C.A.T. *(Contacts, Activities, Time)* ..... 239.
Inventory Control or Professional Billing... 239.
Professional 3-Pak ..... 389.
Cricket Software ... NCP
Statworks *(statistical package)* ..... 75.
Cricket Graph *(multiple windows)*..... 124.
Cricket Draw *(advanced draw capabilities)* 175.
Data Tailor ... NCP
Trapeze *(spreadsheet, reqs. 512k)* ..... 159.
DataViz ... NCP
MacLink Plus *(transfer Mac/IBM data)*..... 159.
Digital, etc. ... NCP
Turbo Maccountant *(GL,AP,AR,Payroll)*.... 255.
Dubl-Click Software ... NCP
World-Class Fonts! *(both Volumes)*..... 47.
WetPaint Clip Art *(both Volumes)* ..... 47.
Fifth Generation Systems ... NCP
FastBack Mac *(powerful backup utility)*..... 59.
Forethought ... NCP
PowerPoint *(professional presentations)* ... 189.
FWB Software ... NCP
Hard Disk Backup or Partition..... 37.
Hard Disk Util *(program backup)* ..... 55.
Greene, Inc. ... NCP
QuickDEX *(address book)*..... 24.
Ideaform ... NCP
MacLabeler or DiskQuick ..... 28.
Imagine ... NCP
Smart Alarms *(DA reminder system)*..... 37.
Multi-User Appointment Diary..... 99.
Infosphere ... CP
LaserServe *(LaserWriter spooler)* ..... 64.
ComServe 1.0 *(modem sharer, NCP)* .... $124.
MacServe *(AppleTalk software)*..... 164.
Innovative Data Design ... NCP
MacDraft 1.2A *(requires 512k)* ..... 157.
LaserWare ... CP
LaserPaint *(requires Mac Plus, LaserWriter)* 315.
Layered ... CP
Notes for...Excel, Works, or Word..... *each* 41.
Legisoft/Nolo Press ... NCP
WillWriter 2.0 *(prepare your own will)*..... 30.
Living Videotext ... NCP
More 1.1C *(outlines, windows, & tree charts)* 149.
Lundeen & Associates ... NCP
WorksPlus Spell 1.1 ..... 46.
MacroMind ... NCP
Videoworks II *(animation tool)*..... 119.
MacroPac International ... NCP
101 Macros for Excel ..... 49.
Micro Analyst ... NCP
Mac Zap *(recover crashed hard disks)* ..... 36.
Microsoft ... NCP
Basic Interpreter 3.0 ..... 62.
Chart 1.02 *(42 chart styles, CP)* ..... 72.
Multiplan 1.1 or File 1.05 ..... 110.
Basic Compiler 1.0 ..... 119.
Fortran 2.2 *(compiler)* ..... 169.
Works 1.0 *(integrated tool)* ..... 185.
Excel 1.04 *(power spreadsheet)*..... 224.
Word 3.01 *(word processor)*..... 239.
Mindscape ... CP
GraphicWorks 1.1 *(newsletters, posters)*.... 87.
Nantucket ... NCP
McMax *(dBASE III compatible)*..... 189.
Nashoba Systems ... NCP
FileMaker Plus *(feature-packed database)*.. 149.
Odesta ... NCP
Double Helix II *(relational, custom menus)* 359.
Olduvai Software ... NCP
DA-Switcher *(unlimited desk accessories)*... 26.
Icon-It! *(create custom icon bars)* ..... 41.
OWL International ... NCP
Guide *(hypertext, free-form info)*..... 77.
Guide Envelope System ..... 99.
Palantir ... NCP
inTalk *(communication to emulation)*..... 99.
PBI Software ... NCP
HFS Locater *(DA organizer for HFS)*..... 26.
HD Backup *(supports MFS, HFS)*..... 28.
Personal Computer Peripherals ... NCP
HFS Backup ..... 29.
ProVUE Development ... NCP
OverVUE 2.1 *(power-packed database)* ... 149.
Satori ... NCP
BulkMailer 3.0 *(mailing lists)*..... 82.
BulkMailer Plus *(up to 90,000 names)*..... 199.
Legal Billing *(attorneys to accountants)*.... 379.
Legal Billing II *(full trust accounting)*..... 569.
Project Billing *(architects to engineers)* .... 442.
Silicon Beach Software ... NCP
Silicon Press *(printer utility, 512k)*..... 41.
SuperPaint *(advanced graphics program)*... 79.
SoftStyle ... NCP
Printworks *(print faster & in color)* ..... 46.
Softview ... NCP
Macinuse *(time-use manager)*..... 42.
Software Discoveries ... NCP
Record Holder Plus *(data manager)*..... 45.
Software Supply ... NCP
Powerstation *(alternative to Finder)*..... 38.
Suitcase *(font and DA utility)*..... 38.
Software Ventures ... NCP
Microphone 1.1 *(includes Glue™)*..... 119.
Solutions, Inc. ... NCP
SmartScrap & The Clipper or Glue ..... 40.
SuperGlue *(total graphic integration)*..... 57.
SuperMac Software ... NCP
SuperSpool 3.4 ..... 45.
Diskfit *(backup & restore utility)*..... 45.
Network Diskfit *(automatic backup)* ..... 205.
SuperLaserSpool ..... 85.
Sentinel *(encryption)* ..... 85.
Multi-User SuperLaserSpool ..... 205.
Survivor Software ... NCP
MacMoney *(financial planner)* ..... 41.
Symmetry ... NCP
Acta 2.0 *(outline/writing desk accessory)*... $37.
PictureBase 1.2 *(clip art manager, 512k)*.... 59.
THINK Technologies ... NCP
HFS Navigator 1.0 *(search for buried files)* .. 35.
Laserspeed *(Laserwriter utility)*..... 55.
Lightspeed Pascal *(includes debugger)* .... 65.
Lightspeed C *(top-rated C Compiler)* ..... 95.
InBox Starter Kit ..... 215.
T/Maker ... NCP
ClickArt Personal Graphics, Effects,
Publications, Letters Vol. 1 or 2, Holidays,
Business Image ..... *each* 28.
Bombay, Plymouth, or Seville Laser font ... 45.
Write Now *(word processor)*..... 99.
TML Systems ... NCP
TML Pascal *(compiler, req. 512k)* ..... 59.
TOPS ... CP *(formerly Centram Systems)*
TOPS *(file-server/LAN software)*..... 139.
TrueBasic ... NCP
True BASIC *(fast, flexible & portable)*..... 59.
Probability, MacFunction or 3D Graphics... 35.
TrueSTAT *(statistics)*..... 58.
Runtime *(create stand-alone applications)*... 59.
William & Macias ... NCP
myDiskLabeler w/Color *(req. Imagewriter II)* .. 32.
myDiskLabeler w/Laserwriter option ..... 35.
Working Software ... NCP
Lookup *(90,000 word spelling dictionary)* ... 29.
Findswell *(locate documents fast)*..... 29.
Spellswell 2.0 *(spelling checker)*..... 42.
Spellswell Medical or Legal Dictionary..... 57.

HARDWARE

Manufacturer's minimum limited warranty period is listed after each company name. Some products in their line may have longer warranty periods.
Note: Some hardware items are available in either platinum or beige color. Please specify.

20 Meg SCSI Hard Drive *(120 days)*..... 529.
AST Research ... 6 months
AST Turboscan *(300 dpi scanner)*..... 1389.
AST 2000 *(20 Meg, 20 Meg tape)*..... 1395.
AST TurboLaser P/S ..... 2995.
Curtis Manufacturing ... lifetime
SURGE SUPPRESSORS
Safestrip *(6 outlets)* ..... 21.
Diamond *(6 outlets)*..... 29.
Emerald *(6 outlets; 6 ft cord)* ..... 36.
Sapphire *(3 outlets; EMI/RFI filtered)* ..... 47.
Ruby *(6 outlets; EMI/RFI filtered; 6 ft cord)* ... 59.
Dove Computer ... 90 days
MacSnap 548S *(512E to 2 Meg w/SCSI Port)* 469.
MacSnap 2S *(1 Meg to 2.5 Meg)*..... 489.
MacSnap 4S *(1 Meg to 4 Meg)* ..... 969.
Ergotron ... 1 year
Mouse Cleaner 360° ..... 15.
MacTilt or MacTilt SE ..... 69.
MacBuffer 1024k ..... 429.
Farallon Computing ... 1 year
PhoneNET PLUS *(DB-9 or DIN-8)* ..... 45.
Hayes ... 2 years
Smartcom II *(communications software)* .... 88.
Smartmodem 1200 ..... 299.
Smartmodem 2400 ..... 449.
Kensington ... 1 year
Disk Drive Cleaning Kit ..... 20.
Tilt/Swivel..... 22.
Universal Copy Stand..... 23.
Polarizing Filter or Surge Suppressor..... 34.
Apple Security Kit..... 34.
Printer Muffler *(80 column)* ..... 38.
Printer Muffler Stand *(80 column)*..... 25.
A-B Box *(for the Mac Plus, SE & II)* ..... 64.
System Saver Mac or Control Center..... 64.
Turbo Mouse *(for the MacPlus, SE & II)* ..... 83.
Koala Technologies ... 90 days
MacVision *(digitizer)* ..... 175.
Kraft ... 1 year
3 Button Quickstick..... 39.
Migent ... 1 year
Pocket Modem *(ext. 1200 baud)*..... 169.
Mirror Technologies ... 1 year
Magnum 800 External Drive *(platinum)* .. $209.
MagNet 30x *(w/cable)*..... 799.
MagNet 40x *(w/cable)*..... 1079.
Magnum Tape 40 II Backup ..... 1079.
MagNet 40/40 *(40 Meg, 40 Meg tape)* .... 2139.
Personal Computer Peripherals ... 2 years
MacBottom HD 21 Meg SCSI ..... 749.
MacBottom HD 32 Meg SCSI ..... 899.
MacBottom HD 45 Meg SCSI ..... 1159.
Optional built-in 1200 bps modems avail.. call
MacBottom I HD-144 Meg *(for Mac II; 1 yr.)* 2195.
Practical Peripherals ... 5 years
1200 Baud External Modem ..... 109.
2400 Baud External Modem ..... 189.
SoftStyle ... 90 days
MacEnhancer *(for plotters to printers)*..... 159.
Systems Control ... 2 years
MacGard *(surge protection)*..... 55.
Thunderware ... 90 days
ThunderScan 4.0 w/Power Port..... 199.

DISKS

Sony 3½" DS/DD Disks *(box of 10)*..... 18.
Fuji 3½" DS/DD Disks *(box of 10)*..... 19.
MAXELL 3½" DS/DD Disks *(box of 10)*.... 20.
Verbatim 3½" DS/DD Disks *(box of 10)*.... 20.
3M 3½" DS/DD Disks *(box of 10)*..... 20.

ACCESSORIES

I/O Design
Imageware II *(Imagewriter II carry case)* .... 45.
Macinware Plus *(Mac Plus carry case)* ..... 65.
Macinware SE *(Mac SE carry case)* ..... 75.
Kalmar Designs
Teakwood Roll-top Case *(holds 45 disks)* ... 14.
Teakwood Roll-top Case *(holds 90 disks)* ... 20.
Moustrak
Moustrak Pad *(large 9" x 11")*..... 9.
Sensible Softworks
Quality "MacAttire" nylon dust covers.... 7-17.
High Trek Mac Plus carry case ..... 59.
High Trek Mac SE & extd. kybd. carry case 69.

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order.
- No sales tax.
- All U.S. shipments insured; no additional charge.
- APO/FPO orders usually shipped 1st Class Mail.
- Allow 1 week for personal and company checks to clear.
- COD max. $1000. Cash or certified check.
- 120 day limited warranty on all products.*
- To order, call us anytime Monday thru Friday 9:00 to 9:00, or Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711 Monday through Friday 9:00 to 5:30.

SHIPPING

Continental US: Barring massive computer failures and other natural or unnatural catastrophes, all non-C.O.D. orders phoned into MacConnection by 8 PM EST will ship Airborne the same night for next day delivery, except for those within UPS Ground Zone 1 (which is also an overnight service). The total freight charge on any order placed with MacConnection is now $3. Backorders will also ship Airborne overnight at no additional charge. Some areas require an additional day delivery. **Hawaii, Alaska and Outside Continental US:** Call 603/446-7711 for information.

1-800/Mac&Lisa

MacConnection
14 Mill Street
Marlow, NH 03456
603/446-7711

520E

MacConnection™

14 MILL STREET, MARLOW, NH 03456 1-800/622-5472 or 603/446-7711

©Copyright 1987 PC Connection, Inc. MacConnection is a division and trademark of PC Connection, Inc., Marlow, NH. All items subject to availability. Prices subject to change without notice.

*Defective software replaced immediately. Defective hardware repaired or replaced at our discretion.

Ho! Ho! Ho!

Hard drives to 144 Meg!

The hard drive pictured above is no slouch of a storage system. It's the *MacBottom HD 45 Meg SCSI* from Personal Computer Peripherals. Not so long ago, a Mac power user would give his right front window for one of those babies. But now PCPC is tempting you with storage that staggers the imagination. A *144 Meg* internal unit for your Mac II, no less. Just loosen two screws, slip in the drive, reassemble, re-boot, and download every disk in your office. For those of you with less voracious memory requirements, PCPC has three versions of external drives. They can be bought with an optional built-in 1200 baud modem, all are compatible with the new Mac II as well as previous Mac versions, and they are available in either platinum or beige.

Personal Computer Peripherals ... 2 years

MacBottom HD 21 Meg SCSI **$749**
MacBottom HD 32 Meg SCSI **$899**
MacBottom HD 45 Meg SCSI **$1159**
Optional Built-in 1200 baud modem (available for each unit). . **$call**
MacBottom IHD-144 Meg ... 1 year (internal for Mac II) ... **$2195**

Borland relates!

With Borland's *Reflex Plus: The Database Manager* you can keep track of clients, bill customers, maintain inventory, analyze sales reports, and generally keep track of and relate all the information you use to run your small business. This new version of Borland's fully-relational Reflex database has many new and unique features. They include a GroupBY function that groups records as you need them, an Auto-Save function, and multiple entry forms. You can even enter data for more than one database from within a single form.

Borland (not copy-protected)
Reflex Plus (for 512, 512E, Plus, SE & II) **$165**

Stop conflicts!

Wouldn't it be nice if people didn't schedule appointments for you the day you were flying to the Bahamas? Don't you wish your boss would stop arranging one conference for the same day you had scheduled another? *Multi-User Appointment Diary* can end those scheduling conflicts. It's the only multi-user calendar for the Mac network (AppleShare, Tops, or MacServe). Full search and print capabilities included. And a simple menu choice can turn any appointment into a *Smart Alarm* reminder.

Imagine (not copy-protected, for 512, 512E, Plus, SE & II)
Multi-User Appointment Diary 1.0 (w/Smart Alarms) **$99**
Smart Alarms 2.5 (single-user) **$37**

$3 Overnight.

Do you know that practically all of the people we ship to receive their packages *the next day?* For only $3 per order. With our new Fly-by-Night℠ service, all you need to do is (1) phone in your non-COD order by 8 PM EST, (2) relax, watch TV or go bowling, (3) accept delivery of your order the next day. Because while you were asleep, your order was picked, packed, trucked, planed, sorted, and then some. To make sure you'd have it when you need it—in most cases, by noon.

The *only* exception would be in the event of extremely unnatural circumstances (i.e. massive computer failures, Marlow-wide power blackouts, etc.). Airborne Express handles the majority of our shipments and, in all but a few cases, will deliver the following day. Orders for delivery within UPS Ground Zone 1 will ship UPS and arrive the next day.

Mac Macros.

Tempo can take any series of keystrokes or mouse clicks and turn them into a single key code. It can repeat that series at any time you like, as often as you like, and even make decisions as to when you want them repeated. It can also move from program to program—great for automating data transfers.

Affinity Microsystems (not copy-protected)
Tempo 1.2 (for 512, 512E, Plus, SE & II) **$54**

Fingertip Facts.

AffiniFile is a desk accessory filing program. Each file you create can include hundreds of topics and subtopics and can, if you like, be the "default file" for a specific application—so you're able, for example, to create your own customized help screens. Every file card shows its topic, subtopic, and related topics.

Affinity Microsystems (not copy-protected)
AffiniFile 1.0 (for 512, 512E, Plus, SE & II) **$49**

Making Macs more manageable.

These two products will keep your vertebrae and your mouse in line, respectively. *MacTilt* is a simple tilt and swivel device that slips under your Mac and makes it look you right in the eye. The *Mouse Cleaner 360°* eliminates all sorts of gunk from your mouse's merry mechanism. Simply replace the mouse ball with the cleaner ball, a few rolls and you're back in business.

Ergotron ... 1 year
MacTilt or MacTilt SE **$69**
Mouse Cleaner 360° **$15**

Award winning WP.

WriteNow from T/Maker was judged the best word processor of the year (1986) by MacUser magazine. It gives you true WYSIWYG editing, including headers, footers, footnotes, and fonts (4 to 127 points). You can save, scroll, search, and print even large documents with blazing speed. It also has a 50,000 word spelling dictionary, and even lets you set up to four columns on a single page. This is a premier word processing program.

T/Maker (not copy-protected)
WriteNow 1.07 (for 128, 512, 512E, Plus, SE & II) **$99**

MacConnection™

14 MILL STREET, MARLOW, NH 03456 1-800/Mac&Lisa or 603/446-7711

©Copyright 1987 PC Connection, Inc. MacConnection is a division and trademark of PC Connection, Inc., Marlow, NH.

WINDOW ON PRINTERS

MAC'S PRINTING OPTIONS EXPAND

It doesn't have to be PostScript

BY RICK LEPAGE
MacWEEK Staff

Since the announcement of the Macintosh, Apple has held a near monopoly when it comes to printers for the Mac.

Users essentially have had two alternatives for printing: Apple's ImageWriter and LaserWriter lines, with the LaserWriter garnering the lion's share of attention. For people who didn't need the LaserWriter or were unwilling to pay the high price for its high-quality PostScript output, the low-end ImageWriter, a 72-dpi impact printer, was almost the only option.

However, as the Mac has become more of a business machine, it has carried a new aura that passes the niche markets of graphics and desktop publishing. For many needs, a $4,000 laser printer is overkill; yet a low-quality, dot-matrix printer is insufficient. What has been needed are printers that can perform such tasks as rudimentary data processing, filling in forms, and printing envelopes and labels.

Laser printers have a place in the market. Alex Shibanoff, director of marketing for Brother International Corp.'s Information Systems Division in Piscataway, N.J., said: "Laser printers have many applications, mostly in word processing and desktop publishing. But laser printers also have a number of limitations, such as the inability to do envelopes, fill out multipart forms and effectively do address labels."

As a result, companies like Brother, Hewlett-Packard Co. and General Computer Co. (GCC) have begun to offer printers that depart from Apple's high- and low-end solutions. While PostScript-based printers continue to be the flashiest segment of the printer market, there is new interest in providing alternatives to users who do not need the high end. Apple has even offered a printer for the middle portion of the market.

Replacing the ImageWriter

For users on a budget, the ImageWriter II is a fine printer. It offers a wide degree of flexibility and adequate output quality, and it has the advantage of being totally compatible with the Macintosh. Unfortunately, it was easy for a Mac user to look over the fence at the IBM PC market and see a wide range of non-compatible printers from companies like Epson America Inc., Panasonic, Brother, NEC Electronic Systems, HP and others, offering nearly every available option from inexpensive dot matrix to daisywheel to high-resolution laser printers.

There were a number of attempts to bring some of these printers to the Mac market. SoftStyle Inc., a software company based in Honolulu, offered a number of printer drivers for the Mac, the most popular of which was LaserStart, which enabled Macs to interface to HP's LaserJet laser printer. Even Microsoft Corp. of Redmond, Wash., tried to expand printer options with a hardware product called MacEnhancer, which offered a number of ports and driver software from SoftStyle that allowed Mac software to output to different printers.

These products, while a step in the right direction, failed to garner much enthusiasm from Mac owners. Users reported bugs and incompatibilities when using the products with some Mac programs, and even though the printer products eventually were cleaned up, they were lost in the market. Other companies tried to offer their printers for the Mac, but the lack of buyer enthusiasm, combined with Apple's strong LaserWriter sales, dampened interest in tapping into the Mac market.

Brother's MacDriver

The situation, however, is changing. Earlier this year, Brother, which sells a line of printers ranging from inexpensive dot-matrix machines to 300-dpi, non-PostScript laser printers, announced a product called MacDriver. The package, which includes software drivers and an interface cable, allows Mac users to connect to any of the Brother printers.

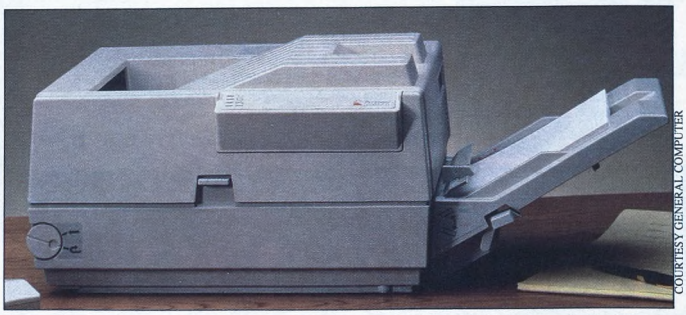
While Brother sells inexpensive printers that can serve adequately as ImageWriter replacements, it also sells a few printers for the middle of the market. One, the brother M-1724L, is a 24-pin printer with a resolution of 180 dpi, more than twice that of the ImageWriter. Brother also sells two daisywheel printers that offer two-color printing, the HR-20 and the HR-40. The HR-40 is intended for heavy-duty printing applications, while the HR-20 is for those with smaller printing needs.

Daisywheel printers are excellent for many applications, especially word processing. For people who primarily print text-only documents and labels, a daisywheel printer is ideal. Print quality is crisp and clean, and users can usually choose from a large number of typefaces. Unfortunately, daisywheel printers cannot print graphics, which makes dot-matrix and laser printers essential for many users.

Brother has come up with a solution to the need for letter-quality text and graphics output: the Twinriter 6, which offers both daisywheel and dot-matrix output. The Twinriter 6 printer allows use of the two print technologies to their fullest advantage. Labels and envelopes can be printed cleanly, and the machine is able to print complex documents with graphics and text.

COURTESY BROTHER INTERNATIONAL

Brother International's Twinriter 6 printer offers both daisywheel and dot-matrix output.



COURTESY GENERAL COMPUTER

General Computer's Personal LaserPrinter is a laser printer based on Apple's QuickDraw graphics routines.

ImageWriter LQ

Apple entered the middle end of the market recently with the ImageWriter LQ. The ImageWriter LQ, with a 27-pin print head, offers 216-dpi resolution, three times the resolution of the Mac screen. It has Courier, Times and Helvetica fonts built in, which helps to increase its printing speed, and has a 15-inch-wide carriage that will please business users with heavier data processing and spreadsheet applications.

The printer will ship later this year. Its high-quality output, combined with Apple's name, should make it a big seller.

Non-PostScript laser printers

The PostScript laser printer market for the Mac is growing constantly. Unfortunately, the additional cost of these printers — because of the PostScript licensing and controller technology — causes many people who want high-resolution output to settle for much less.

General Computer of Cambridge, Mass., however, has an option for those users: the Personal LaserPrinter (PLP). The PLP is a 300-dpi laser printer based upon Apple's QuickDraw graphics routines, which allows it to print letter-quality text and high-resolution graphics images from most Mac applications. Because it is not based upon PostScript, it costs $1,000 to $1,500 less than PostScript printers.

The PLP cannot be networked, which can be either a blessing or a hindrance, depending upon a user's needs. For those with heavy-duty personal applications, the printer is ideal. For smaller businesses and departments with multiple Macs, it is usually cheaper to buy a laser printer that can be networked or a number of inexpensive impact printers.

While GCC is the only company with a QuickDraw laser printer, rumors of an Apple laser printer based on QuickDraw refuse to die, and a number of firms are looking to move their LaserJet clones to the Mac market. Right now with its QMS Kiss, QMS Inc. of Mobile, Ala., is the only company actively pushing a laser printer in the Mac market.

Ink-jet printing

Hewlett-Packard of Palo Alto, Calif., also offers a printer to Macintosh users, the PaintJet, a 180-dpi color printer that uses ink-jet technology. Ink-jet printers use cartridges that spray a fine stream of ink onto the paper. One of the big advantages of this technology is that

See PRINTERS, Page 31

SPOOLERS MOVE ALMOST AS QUICKLY AS PRINTERS

LAX JANSEN

BY RICK LEPAGE
MacWEEK Staff

While the Macintosh market for printers has only recently expanded, the spooler market has been established for a while. For users of both the ImageWriter and the LaserWriter, there is a corresponding option for print spooling, and often there are a number of software and hardware choices available as well.

The need for a spooler is obvious to nearly any Mac user who ever has to print. Without spooling, the Mac is dedicated to one task: printing. During unspooled printing, control of the Mac is not returned to the user until the printing job is completed, which can be frustrating for people with heavy printing needs or large documents. Spoolers bypass this problem, usually by storing print information on disk and sending the data to the printer as a task running in the background, allowing the user to work freely in the foreground with minimal interruption. A good spooler will do this without making the user aware that printing is happening at all, although some slowing down in the foreground task is inevitable, especially with the LaserWriter.

ImageWriter spooling

ImageWriter spooling has been available for a long time, to the point where most hard disk vendors offer a print spooler program bundled with their drives. Personal Computer Peripherals Corp. of Tampa, Fla., a manufacturer of drives and color monitors, was one of the first vendors to offer spooling capabilities with its MacBottom drives. SuperMac Technology of Mountain View, Calif., offered an ImageWriter spooler called SuperSpool with its DataFrame drives. Many of the spoolers that come with hard drives will work only with that vendor's drives, although SuperMac also offers a version of SuperSpool that works with any Macintosh. SuperSpool also allows spooling of files to the networked version of the ImageWriter, the AppleTalk ImageWriter.

Hardware-based spoolers for the ImageWriter also are available, most notably from Ergotron Inc. of Minneapolis, Minn., and DataSpace of Markham, Ontario. DataSpace's product, Mac Buffer, comes with 256 Kbytes of buffer space, expandable to 1 Mbyte. It can be used as either a stand-alone model connected to a single Mac or a networkable product, allowing a number of users connected to AppleTalk ImageWriters to spool files.

Ergotron offers a product with a similar name, the MacBuffer IW, which offers 256 Kbytes of buffer storage that is expandable to 1 Mbyte. The MacBuffer IW also can be used with the AppleTalk ImageWriter.

Spooling the LaserWriter

The advent of the LaserWriter and other PostScript printers made the problem of printing even more acute. Many early users of the LaserWriter were upset by the large amount of time necessary to print complex documents, especially when the printer was shared among users and they had to wait a long time to print.

Getting spooling capabilities for the LaserWriter was more difficult than it was for the ImageWriter. The main problem was the

See SPOOLERS, Page 30

SPOOLERS

Continued from Page 29

LaserWriter's need to maintain an interactive link between the printer and the Mac during printing. As a result, the first spoolers for the LaserWriter were hardware-based black boxes that took Mac output and then interacted with the LaserWriter.

After some consultation among a number of companies, including Apple, Adobe Systems Inc. and Aldus Corp., software-based LaserWriter spooling became a reality late in 1986. One irony of this new ability was that PageMaker, Aldus' desktop publishing program, had problems spooling with the first wave of spoolers that hit the market. However, this situation was temporary.

The main third-party vendors that offer software-based LaserWriter spoolers are Think Technologies Inc. of Bedford, Mass., with LaserSpeed; InfoSphere of Beaverton, Ore., with LaserServe; and SuperMac, with SuperLaserSpool. All three products offer advanced spooling features, such as file handling and queuing abilities, delayed printing options and error handling. Each product is offered in single- and multi-user configurations.

One issue that came to the forefront with software-based LaserWriter spooling was disk space. LaserSpeed, LaserServe and SuperLaserSpool create spool files on an available disk, but they do it differently. LaserSpeed and LaserServe store files as PostScript code, which can lead to problems if disk space is at a premium. PostScript files are often very long, especially when graphics are involved, and it is not unheard of for a 20-Kbyte Mac file to turn into a 100-Kbyte spooled PostScript file. If enough large files are spooled, users could find themselves with little available space to store work files. In most cases this is not a problem, but it is something to be aware of.

SuperLaserSpool, on the other hand, stores files as QuickDraw representations, which are usually the same size as the file that was printed. This method seems to have its problems, though. It requires more intensive use of the Mac's time, and users have reported instances of the background spooling interfering with what the user was trying to do in the foreground. However, SuperMac claims to have fixed the slowing down of foreground applications and optimized the process considerably.

Apple joined the spooler bandwagon last January with the announcement of LaserShare, a spooler for the company's AppleShare file server. LaserShare's major limitation is that it is tied to AppleShare, but Apple has announced more complete background printing capabilities from within MultiFinder, the firm's latest release of system software. Initial reports indicate that it offers a much slimmer set of options than the Think, InfoSphere and Supermac spoolers. Occasional users probably will be content with Apple's offering, but those with greater printing demands most likely will stick with the richer features of the third-party products.

Hardware-based LaserWriter spooling

DataSpace and Ergotron both offer hardware devices that run the spooling process. These products offer the advantages of spooling without the worry of background printing slowing down foreground tasks. In addition, these products often come with memory expansion boards that increase the available number of print jobs.

DataSpace was among the first companies to offer any kind of spooling for the LaserWriter. The LaserServer is a unit that comes with 2 Mbytes of RAM and has the ability to store up to 32 print jobs at one time. The LaserServer can be upgraded in 2-Mbyte increments to a maximum of 12 Mbytes.

Ergotron's MacBuffer LW is a similar device that works with both AppleTalk and Abaton Technology's MultiTalk network. The base unit comes with 1 Mbyte of RAM; 1-Mbyte expansion kits are available to a maximum of 4 Mbytes.

The prices of these units are high, but high-volume shops with crucial needs often can justify the cost when considering the amount of time saved. Until the prices of these units come down, however, software-based solutions will be the most common.

When grouped together, the myriad of spooler products for the Macintosh can be overwhelming. For ImageWriter printing, the easiest way to start spooling is to buy a hard disk, although that is not the only option. For LaserWriter spooling, the issues are a bit more complex and the prices are higher, even though software-based LaserWriter spoolers are beginning to be offered with hard disks as well. The fact that Apple has built its own spooler into MultiFinder shows that spooling is a priority, and the richness of the products available means that it's hard to make a bad purchase. ■

It's the highest achi
to be both beautiful an

In the field of nature, the design skills of the hen and the spider have rightfully earned universal acclaim.

In the field of desktop publishing software, the same credentials apply to Letraset, leaders in graphic design for nearly 30 years.

And now Letraset introduces its latest achievement: Ready Set Go! 4.0™ page layout software for the Macintosh™ embodying the perfect balance of desktop publishing beauty and productivity.

For the artist in you, RSG! 4.0 offers innovative design features that allow you to produce pages that are excitingly creative.

Including automatic runarounds for impressive visual effects. An elegant new tool bar that keeps your tool boxes accessible to each document you're creating. Powerful snap-to design grids that help you interactively place text and graphics and visualize designs as you go. Facing pages that allow you to view, edit and lay out a two-page spread. "Lock-and-Don't-Print" features that enable you to produce multiple pages for color overlays. And over 50 fill-and-pen patterns, based on Letraset's popular collection

PRINTERS

Continued from Page 28

it is quiet. Many users find that the racket made by impact printers is too much to take and they must install sound covers to cut down the noise. The PaintJet's lack of noise, plus its ability to print text and graphics in seven colors, make it a good choice for small offices.

Universal interface

Orange Micro Inc. of Anaheim, Calif., does not offer any printers for the Mac. What it does offer, however, should make many PC printer manufacturers happy. The Grappler Universal Printer Interface is a hardware device that looks like a printer cable with a box at one end. The box contains firmware that emulates an ImageWriter II and a parallel port that connects to most parallel printers, according to the company. With this approach, there is no need to add device drivers or fiddle with software.

With the announcement of new printers, there are indications that the Mac market will continue to heat up. Naomi Luft, senior research analyst with Datek Information Services in Waltham, Mass., said: "Apple was able to corner the market for so long, but we see indications that the Mac is becoming somewhat analogous to the IBM PC. This will be a market that almost all of the major printer companies will enter."

Mac users will no longer be limited to a few choices and have to pay high prices for PostScript compatibility to get high-quality output. The market now runs the gamut of printer types, including inexpensive dot-matrix, letter-quality daisywheel and affordable laser printers, making the Mac more versatile. ■

PRODUCT INFO

Apple Computer Inc.
ImageWriter II: $595; ImageWriter LQ: $1,399; LaserShare: $299
20525 Mariani Ave.
Cupertino, Calif. 95014
(408) 996-1010

Brother International
MacDriver: $99.95; Twinriter 6: $1,395; HR-20: $499; HR-40: $799; M-1724L: $899
8 Corporate Place
Piscataway, N.J. 08854
(201) 981-0300

DataSpace Corp.
Mac Buffer: $549; 1-Mbyte board for Mac Buffer: $249; LaserServer: $2,295; 2-Mbyte board for LaserServer: $1,095
185 Riviera Drive
Markham, Ontario L3R 5J6
(416) 474-0113

Ergotron Inc.
Mac Buffer LW: $1,895; 1-Mbyte expansion for Mac Buffer LW: $350; Mac Buffer IW: $399
1621 E. 79th St.
Minneapolis, Minn. 55420
(612) 854-9116

General Computer
Personal LaserPrinter: $2,599
580 Winter St.
Waltham, Mass. 02154
(617) 890-0880

Hewlett-Packard Co.
PaintJet: $1,395
3000 Hanover St.
Palo Alto, Calif. 94304
(415) 857-1501

Infosphere
LaserServe: $95 (single-user), $295 (five users)
4730 S.W. Macadam Ave.
Portland, Ore. 97201
(503) 226-3515

Orange Micro Inc.
Grappler Universal Printer Interface: $99
1400 North Lakeview Ave.
Anaheim, Calif. 92807
(714) 779-2772

SuperMac Technology
SuperSpool: $74.95; SuperLaserSpool: $149 (single-user): $395 (multi-user)
295 N. Bernardo Ave.
Mountain View, Calif. 94043
(415) 964-8884

Think Technologies
LaserSpeed; $99 (single-user), $495 (multi-user)
135 South Road
Bedford, Mass. 01730
(617) 275-4800

evement of great design
d functional.

of rules and borders, to create a variety of special graphics.

The practical side of you will be pleased to learn that RSG! 4.0 is also packed with a wide array of powerful time and effort saving production features.

For example, RSG! 4.0 provides full-function word processing and a 100,000-word spell checker that suggests correct spelling alternatives. Style sheets that let you make formatted changes throughout a one page layout or an extensive document with a single keystroke. A linker tool that allows text to flow automatically as new text or graphics are needed. And RSG! 4.0 even boasts tabloid-size page formats up to a generous 99×99 inches.

In other words, RSG! 4.0 is the first page layout software of its kind. A tool for those who recognize that great design is the product not only of powerful creative resources, but of a genius for efficient production.

Any authorized Letraset graphic design software dealer will be glad to illustrate the above with a Ready Set Go! 4.0 demonstration. For the name of the dealer nearest you, just call (800)722-0377.

Letraset®
ESSELTE
Communication by design.

Copyright 1987 Letraset USA. Ready Set Go! 4.0 is a trademark of Manhattan Graphics, Inc. Macintosh is a trademark of Apple Computer, Inc.

WINDOW ON STATISTICS

SAMPLING THE MEAN

Programs make statistics more accessible

BY ALAN HOPKINS
and VERNON KEENAN
Special to MacWEEK

Statistical software has been available for microcomputers for years, although most programs have been unable to shed their mainframe origins of command-line interfaces, limited graphics and batch-mode operation. The Macintosh, however, has ushered in a new era in statistical computing, offering businessmen and scientists alike the ability to integrate innovative graphics with classical statistical analysis in an interactive environment.

The Mac's interface makes it easy for users to analyze and present their data attractively and informatively, and the wide range of statistical packages available for the Mac includes simpler programs for the occasional user as well as complex, multidimensional programs for the professional statistician.

Mainframe roots

The most complete statistical software systems have a mainframe heritage. Statistical number crunching traditionally has been accomplished on large multi-user computers, largely devoid of interactive computing and high-quality statistical graphics. In these environments, users are denied the ability to manipulate freely their data in a hands-on manner.

Some of these large statistical systems, such as BMDP, SPSS and SAS, became available to users after being ported from Control Data Corp. and IBM mainframes to VAX minicomputers from Digital Equipment Corp.

Most of these systems subsequently were made available to MS-DOS users, but these programs are forced to live down their legacy: a command-driven user interface that is not really practical for the busy professional who wants to look at his or her data quickly and efficiently.

New Mac programs

Traditional statistical software is not easily ported to the Mac because of the machine's graphical interface. While it has been done, most Mac users find it difficult, if not impossible, to use quickly ported versions of high-end statistical software. This has caused almost all Macintosh statistical programs to be written exclusively for that machine.

Statistical software developers are providing substantial improvement in the human interface and new graphical data analysis tools. The user of Macintosh software does not have to focus on the mechanics of using the software, just on the data analysis. But since it can take years to develop a full-featured statistical system, the Macintosh market is still maturing. Writing statistical software is labor intensive, and the relatively small size of the market has caused statistical software development to lag behind other segments of the Macintosh software market.

What should statistical software do?

In statistics, objects are sampled and analyzed. For analysis, data is usually arranged in a spreadsheet-like matrix in which rows correspond to objects and columns correspond to the variables, or the values of measurements. An ideal statistical software system should enable you to visualize and manipulate this matrix, allowing you to reach conclusions about the data's structure.

The computer must not get in the way of the user, but instead it should provide transparent access to the raw data, be able to render powerful graphical manipulations and perform the classical statistical procedures.

> The Macintosh has ushered in a new era in statistical computing, offering businessmen and scientists alike the ability to integrate innovative graphics with classical statistical analysis in an interactive environment.

The first step in analyzing data is getting it into your statistics program. The common delimitor is a text file, in which data is stored in tabular columns. Most programs can import text files. The better programs can transfer variable names in these files. In larger firms, where data usually is stored on a network or larger computer, you need a way to get at the data.

If you have been collecting data on your Macintosh, you can usually export the contents of a spreadsheet or database file to a text file, which can then be read by the statistics application. Another source of input common in research laboratories is data collected from laboratory devices. Finally, most programs simply let you key in the data directly.

A good statistics application should let you freely play with your data, using interactive graphics, transformation of variables prior to an analysis and creation of new variables. For example, a physician trying out a new drug might get a non-linear curve when plotting treatment data vs. the response data. By playing with the data, transforming it with functions like logarithms, deriving the square root and exponentiation, he may get a straight-line plot and discover that response doubles every time the dosage is increased tenfold.

All Macintosh packages offer several standard statistical displays: histograms, box plots and scatter plots. Most applications let you use control variables to create categories for comparison. Statistics, both parametric (such as t-tests and analysis of variance) and non-parametric (such as rank tests and some correlation matrices), are available to determine statistical significance on differences. Linear regression analysis is available from some programs to help users look for trends or to describe the linear relationship between two variables.

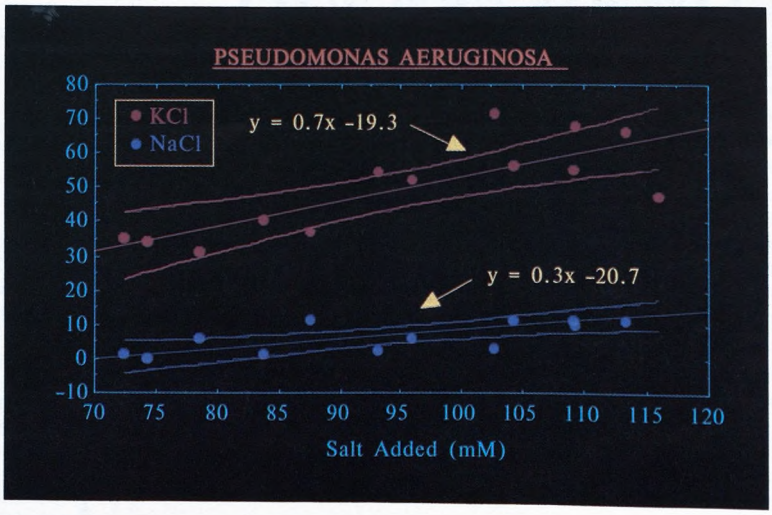
Algorithms

In the statistics world, algorithms are everything; accuracy, precision and speed are paramount considerations. Apple's SANE (Standard Apple Numeric Environment) takes care of most of the speed and raw numeric accuracy requirements. SANE performs floating-point calculations with 19 significant digits using numerical standards established by the Institute of Electrical and Electronic Engineers.

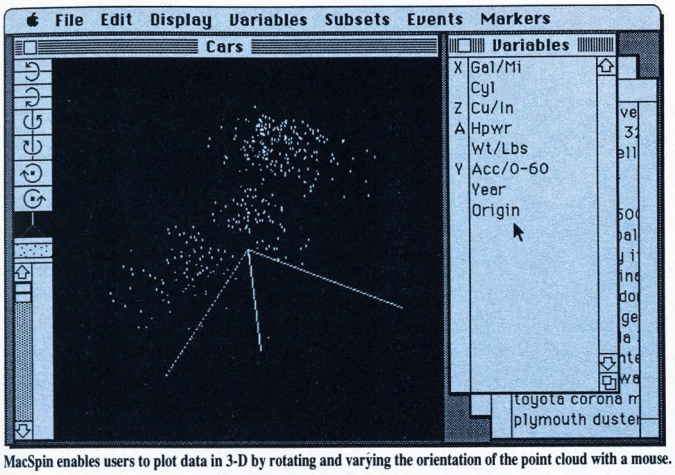
Unfortunately, there is no guarantee of the accuracy of the statistical algorithms implemented in each program. Even if you approve of the algorithms published with the application, errors could have been committed when the algorithm was coded. Also, when performing some calculations, it is easy to introduce error due to rounding off numbers, even with 19 digits. Users need to be aware of the quality and reputation of algorithms implemented in their software.

An important requirement in the evaluation of statistical software is validation, which requires a vendor to document that the product is accurate and does what the documentation claims. Applications must guard against data sets that may yield unreliable results. Applications also should detect such problematic data sets and refuse to calculate statistics to avoid misleading the user with unreliable results.

An ideal capability for an advanced statistical user would be to link in his own algorithms. These algorithms, written and compiled in a language like Fortran, C or Pascal, need to know about the data matrix and what part needs to be processed. To keep the algorithm efficient and task-oriented, it should know about standard mathematical tools available in



Statisticians no longer have to be color blind because the Mac II offers the ability to perform data analysis in color. StatView II, a statistical program soon to be released from Abacus Concepts, takes advantage of the color.



MacSpin enables users to plot data in 3-D by rotating and varying the orientation of the point cloud with a mouse.

the package, such as matrix algebra.

Finally, standards need to be developed for how the algorithm will process an interactive graphical display. No developer has announced plans to offer such interfaces, but some see it as a way to quickly adapt their graphical input and output systems to established algorithms.

Points in space

If you are confronted with trying to understand the interrelationship among a set of variables, then the special graphical abilities of MacSpin, from D² Software Inc. of Austin, Texas, comes in handy. A truly astounding demonstration of the Mac's graphics ability, MacSpin allows you to look at your data in ways that were previously impossible. MacSpin is an interactive exploratory analysis tool for viewing multivariate data. This program plots data in 3-D by rotating and varying the orientation of the point cloud with the mouse. The display can reveal outlying observations, clustering and non-linearities in the data, helping to develop more formal statistical models. It can also plot and rotate arbitrary 3-D coordinates.

> A good statistics application should let you freely play with your data, using interactive graphics, transformation of variables prior to an analysis and creation of new variables.

A special feature of MacSpin, called animation, displays subsets of the data as defined by a fourth (animation) variable. Using this variable, a series of successive frames may be processed by the viewer like a movie. MacSpin also provides the ability to highlight/mark subsets, perform variable transformations and zoom to a high-resolution display mode. Previously, the features in MacSpin were available only at a few research centers that use sophisticated graphics computers.

MacSpin is not designed to calculate the standard statistics found in other applications. It is not a statistical package in the traditional sense; it is a graphics data viewer. This lack of computational capability may be overlooked, especially when you consider MacSpin's tremendous flexibility. For example, given the molecular coordinates, it is pretty simple to plot and freely rotate a DNA molecule.

Entry-level statistics programs

Of the statistics programs available for the Mac, StatWorks from Cricket Software of Malvern, Pa., is the one designed for the "weekend" statistician on a budget. StatWorks will compute many of the statistics described in a traditional introductory statistics textbook, but it does not really fill the bill in terms of consistency. It is simple and easy to use, borrowing many of the user interface features of Cricket Graph, Cricket's graphing program.

StatWorks helps provide guidelines when trying to calculate the strength of relationships and provides some nice graphics tools. In some places, though, the documentation is inaccurate, and the writer of the documentation exhibited statistical naivete when describing how to use the two-sample t-test. But for many simple analyses, this program can be useful for the casual user.

StatView 512+

StatView 512+ from BrainPower Inc. of Calabasas, Calif., is a powerful application that meets everyday research requirements. A general-purpose software package that nicely integrates statistics and quality graphics, StatView closely follows the Macintosh user interface guidelines, making most users immediately comfortable. In StatView, the user specifies the variables of interest, then selects a view — a table for numerical results, or scatter plots, bar charts or box plots for graphical views. The graphics programs are flexible enough to make plots that are of presentation quality.

StatView has comprehensive linear regression capabilities: simple linear regression, multiple regression, stepwise multiple regression and polynomial regression. After performing a simple regression, StatView can present a plot of the data with the fitted regression line. It also can show the confidence interval for a fitted regression line and can easily plot residual and predicted values.

DataDesk

Another program, DataDesk from Data Description of Ithaca, N.Y., strives to give the user a Finder-like "desktop" environment to explore his data. Various programs are easily accessible and facilitate the data analysis. The work is guided by the user, not the program, giving the user the freedom to request different analyses at any time. The application is pitched toward exploration, toward those who come to their data analysis with an open mind, perhaps looking for unexpected results from the data.

One of DataDesk's strengths is the ability to rotate point clouds in a manner similar to MacSpin. Rather than explore the structure of the data numerically with a factor analysis, DataDesk provides an understanding of the data matrix through graphical displays and other interactions. This type of analysis can be used as a preliminary to more formal procedures, such as a multiple regression.

Some other graphical displays available include static scatter plots, histograms and box plots. The regression module provides diagnostic statistics that may be used to assess the impact of individual points on the regression equation. Other statistical procedures included are one- and two-sample t-tests, confidence intervals, one- and two-way analysis of variance, and simple contingency table analysis.

DataDesk comes in professional and student versions. The student version, a subset of the professional version, is intended as a learning tool for classroom instruction or for individuals wishing to gain an understanding of statistical analysis. In addition, Data Description and Odesta Corp. of Northbrook, Ill., have announced plans to offer jointly an enhanced version, DataDesk II, that will offer even more sophisticated capabilities and have a direct interface into Odesta's Helix database collections.

Power without the Mac interface

If you need to perform sophisticated analysis and you don't care about an awkward user interface, check out SYSTAT from SYSTAT Inc. of Evanston, Ill. It is different from the other statistical software in two important respects: the breadth of its statistical procedures, and its mainframe and IBM PC heritage. SYSTAT goes beyond the other packages' statistical procedures, offering multivariate general linear models, multidimensional scaling, cluster analysis, time series and non-linear regression, and other functions.

SYSTAT's power makes it a system for the professional. Sophisticated users can perform numerical computations with SYSTAT that cannot be done with the other systems.

The implementation of SYSTAT on the Macintosh differs from other vendors' because it is command-driven and consists of a number of related, though separate, program modules, each of which functions independently. For example, after running and saving the residuals from a regression, you must exit the regression

See STATISTICS, Page 34

Color within reach of statisticians

Many statisticians have been color blind for their entire career, not by choice, but because color video devices were too expensive. Now, the Mac II offers the opportunity to perform data analysis in color.

Color is a greater enhancement to the statisticians' toolbox than the increased processing speed of the Mac II. One program that takes advantage of color is StatView II, scheduled to be released in December by Abacus Concepts Inc. of Berkeley, Calif. StatView II is a souped-up version of StatView 512+, which Abacus developed for BrainPower.

The program requires a 68881 math coprocessor and takes full advantage of 8-bit color boards and several features found in the Mac II's ROM. One feature the program reportedly has is the ability to display points belonging to different groups in a color scatter plot, complete with the fitted least squares line, drawn in color. A flexible color palette makes color selection easy.

More color graphics capabilities for the Mac II will make it a more serious contender in the highly competitive workstation market. An extension of the scatter plot matrix idea, called brushing, has been recommended by Rick Becker and colleagues at Bell Laboratories. Brushing refers to identification of one region of a plot in a scatter plot matrix and simultaneously highlighting the points in the other plots.

Workstation computers such as Sun Microsystems Inc.'s Sun 3 line and Silicon Graphics' Iris still outclass the Mac II in raw power, display resolution and some software capabilities. Most UNIX workstations run versions of the popular "S" graphing language, a very powerful graphing system also developed by Bell Laboratories. At a recent American Statistical Association conference in San Francisco, an Iris workstation running S displayed a color point-cloud rotation program.

Connectivity is another area in which the Mac II has to do some catching up. Sun has established NFS (Network File System) as a de facto standard in Ethernet connections. Sun workstations are easily installed into existing UNIX networks and have instant and transparent access to data stored in central locations.

> Color is a greater enhancement to the statisticians' toolbox than the increased processing speed of the Mac II.

Apple does not support any widespread file service protocols for the Mac II; the EtherTalk adapter card only speaks AppleTalk over Ethernet, not the more popular NFS, TCP/IP (Transmission Control Protocol/Internet Protocol) or DECnet protocols.

Vendors such as Pacer Software of La Jolla, Calif., and Alisa Systems of Pasadena, Calif., are addressing the connectivity problems for the Mac II.

The Mac II will soon offer statisticians a kind of heaven on earth: instant access to raw data, powerful color software, large color displays and enough processing speed to get the job done. — *By Alan Hopkins and Vernon Keenan*

STATISTICS

Continued from Page 33

module and launch the graph module, telling the program again what data set you are using and issuing the plot instructions.

Although SYSTAT fails to combine its power effectively with the Macintosh interface, the company has gone to great lengths to customize its graphics module for the Macintosh environment, offering more complex charting features than are available on the IBM PC version.

The state of the art

When selecting a statistical microcomputer system, the buyer must beware. Closely inspect the credentials of the authors. Look for software written by persons with formal training and experience in statistics and data analysis.

For casual use, be sure that you have a basic understanding of statistical concepts before tackling these programs. Otherwise, you will get little, if any, valid information from their analyses. Textbooks on statistical theory and programs like DataDesk's student version can help provide this introduction and give you the ability to use the Mac as you learn.

Mainframe packages have developed a complete toolbox of statistical techniques. The Mac software does not yet have as many features as the mainframe systems, but interactive graphics techniques, such as point-cloud rotation and the ability to switch quickly and smoothly between graphical and statistical procedures permit exploratory analyses that were previously impossible with mainframe software.

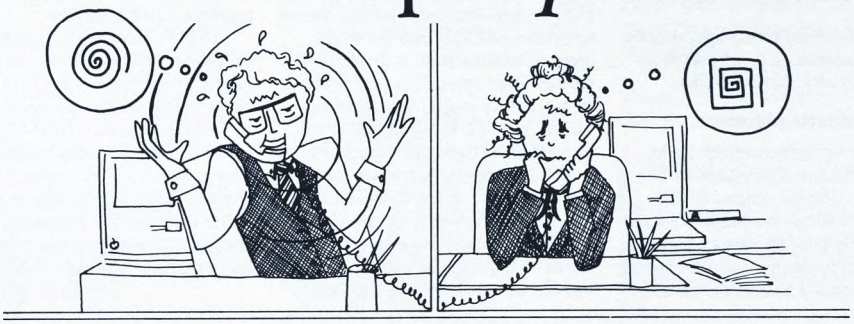
Conclusion

But for many formal statistical analyses, the mainframe or minicomputer still has a vital role to play. For users who have a mainframe at their disposal, it remains a good choice for routine analyses. The Mac is at its best when exploratory graphics are combined with ease of use to allow non-statistical professionals to explore freely and transparently their data. ■

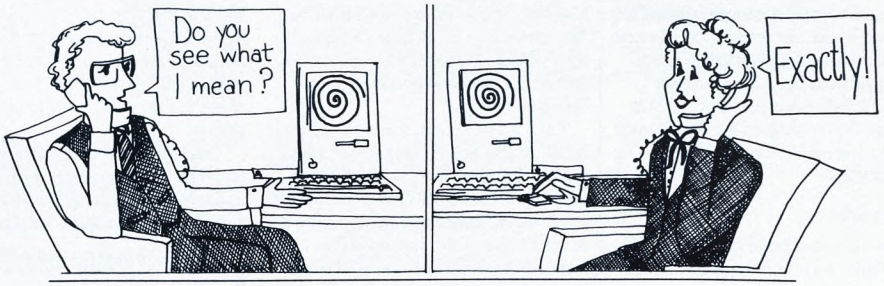
Vernon Keenan is a VAX system programmer with a San Francisco pharmaceutical manufacturer and system operator of the Macintosh Tribune bulletin board system.

Alan Hopkins earned a Ph.D. in biostatistics from the University of California, Berkeley. He has written commercial statistical software for survival analysis and now works on the design and analysis of clinical trials.

Desktop *Express*™



because great minds seldom think alike.



The Meeting of the Minds With Desktop *Express*™ software, the great mind in New York can *see* what the great mind in L.A. has been trying to say.

Send text *and graphics,* using a Macintosh™, a modem and MCI Mail®, to your associates in the next office, or in the next state. With this new electronic mail and document delivery service, they'll get the picture clearly anytime – day or night – via MCI Mail.

Desktop *Express* extends the 5 o'clock "express" deadline, so working across time zones can be as efficient as working across the hall. And, it replaces those fuzzy facsimile figures and forecasts with high resolution graphic presentations. Send ideas back and forth in a matter of minutes and accomplish in an afternoon what would normally take several days of overnight courier exchange.

Created by Dow Jones, Apple, and MCI, Desktop *Express* works with the Macintosh software programs you've come to rely on. Create a business plan complete with charts, graphs and spreadsheets. Send it to any of your associates who have Desktop *Express*. They can review the plan and even print it – all *without* the software program you used to create it. But if they do have the program, and Desktop *Express*, they can revise your document on the spot and return it to you.

For your associates who don't own a Macintosh, Desktop *Express* still delivers. Direct your documents electronically to an MCI Mail Print Center. There they will be printed on a laser printer and delivered via postal or overnight delivery.

With Desktop *Express*, your big ideas will get looked over, not overlooked. So, for the Apple Dealer in your area call **1-800-538-9696 Ext. 350**.

Desktop *Express.* Now, great minds don't have to think alike to get the picture.

Dow Jones®

P.O. Box 300, Princeton, NJ 08543-0300. Desktop *Express* is a trademark of Dow Jones & Company, Inc. © 1987 Dow Jones & Company, Inc., All Rights Reserved.

PRODUCTS INFO

Data Description Inc.
DataDesk: $175
P.O. Box 4555
Ithaca, N.Y. 14852
(607) 257-1000

D² Software Inc.
MacSpin: $199.95
5609 Adams Ave.
Austin, Texas 14852
(512) 482-8933

Cricket Software
StatWorks: $125
30 Valley Stream Parkway
Malvern, Pa., 19355
(215) 251-9890

BrainPower Inc.
StatView 512+: $349.95
24009 Ventura Blvd., #250
Calabasas, Calif. 91302
(800) 345-0519; in California, (800) 884-6911

Abacus Concepts Inc.
StatView II: $495
(scheduled for December release)
1984 Bonita St.
Berkeley, Calif. 94704
(415) 540-1949

SYSTAT Inc.
SYSTAT: $595
2902 Central St.
Evanston, Ill. 60201
(312) 864-5670

Mac II power for the SE:

Once you try an accelerated SE, you won't want to go back. Prodigy SE™ by Levco gives you the highest performance, true Mac™ II and SE compatibility, and *confidence* that your system will expand properly. Here's how:

High performance design—no compromise.

The Prodigy SE gives you the 32-bit 68020 running at 16MHz, with fast, 32-bit memory. Like the Mac II. Not the slower, 16-bit memory on the SE motherboard that some accelerators use.

The 68881 coprocessor chip that speeds math operations up to 100 times now comes *standard*.

Your SE will run Mac II software faster than a Mac II. Unlike some other accelerators, Prodigy SE lets you switch back to *native* SE mode.

The Prodigy SE can expand to 32 Mb of RAM. (Some accelerators limit you to 4 Mb.) And, like the Mac II, Prodigy SE includes a socket for the PMMU chip that is essential for Apple's® upcoming A/UX™. Boards without the PMMU lock you out of Apple's next-generation software.

Keep your SE expansion options—no compromise.

The Prodigy SE's optional SE expansion slot lets you connect *your choice* of SE expansion peripherals. Like our SuperView large screen monitor.

Some accelerators don't give you a true SE expansion slot, limiting your options.

Superb support—no compromise.

Our thorough documentation—rated highest by InfoWorld—will answer your questions. Our high performance support hotline will solve your problems. Period.

For your nearest *authorized* SuperMac™ dealer, call today.

Find out why Byte Magazine, when comparing SE accelerators, concluded, "The Prodigy SE wins on both performance and peripheral expandability." Or why InfoWorld has given Prodigy SE the highest rating of all accelerators reviewed.

SuperMac Technology
295 N. Bernardo
Mountain View, CA 94043

SUPERMAC TECHNOLOGY

(415) 964-8884 Dept 43

Apple is a registered trademark, Macintosh II, SE, and A/UX are trademarks of Apple Computer Inc. Prodigy SE is a trademark of Levco Inc., a division of Scientific Micro Systems. SuperMac is a trademark of SuperMac Technology, a division of Scientific Micro Systems.

Scanning your scanner options

With numerous scanners already in the market and more advanced models on the way, the choices can be confusing. In this week's issue we offer a checklist of issues you should consider, along with reviews of two popular models, AST Research's TurboScan and DEST's PC Scan Plus. Next week we will continue our coverage of the scanner market with a close look at Abaton's Scan 300/FB and its new state-of-the-art software and a survey of other new products scheduled for release over the coming months.

PC Scan Plus 651

DEST Corp.
1201 Cadillac Court
Milpitas, Calif. 95035
(408) 946-7100; (800) 538-7583
Retail price: **$2,495 for PC Scan Plus 651; Publish Pac, $595; cable kit, $95.**
Strengths: Fast and easy OCR capabilities for selected typefaces; good quality one-bit image capturing.
Weaknesses: OCR does not support most LaserWriter fonts and can't be taught new typefaces; some problems with proportionally spaced faces; graphics capabilities of this model limited.

BY HENRY BORTMAN
Special to MacWEEK

DEST's PC Scan Plus scanner and Publish Pac software offer a capability most competitors in the Mac market can't yet match: OCR.

Actually, we found that the model we tested, the PC Scan Plus 651 with Version 1.11 of the software, also did exceptionally well capturing images in one-bit mode. But since the company already has announced a new line of scanners with enhanced graphics capabilities (See MacWEEK, Nov. 3.), we will concentrate on the DEST's text-reading talents, which will not change significantly in the new models.

OCR, or optical character recognition, is the ability to turn hard-copy text into editable computer files.

As long as your original is in one of the typefaces it supports, scanning text with Publish Pac is quick and easy, so easy that once you try it, you might wonder what all the fuss is about. You put the page in, the scanner "reads" it, thinks about it briefly and presto! — you have a screen full of text that you can save in ASCII or MacWrite format. It takes only 20 to 25 seconds per page.

If the original is too light, however — a poor-quality photocopy, for example — or if it is not aligned on the page, Publish Pac will have a difficult time. It will proceed very slowly and give you a lot of "#" characters, which mean "unrecognizable character." Unless your original can be improved prior to scanning, you may be better off retyping the document.

One timesaving feature allows you to feed in the pages of a multipage document one after another. Publish Pac saves everything as a single text document. Another valuable feature is that you can scan, in graphics mode, a page that contains graphics and text, then select a text portion of the page and convert it to a text document.

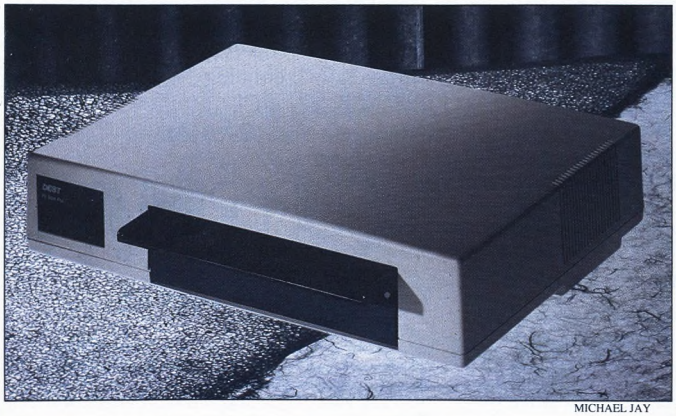
Publish Pac can read many typefaces common in business offices in 10- and 12-point sizes, including Courier, Pica, Prestige and Letter Gothic from letter-quality printers or typewriters; dot-matrix type from the Epson and other popular models; and the Hewlett-Packard LaserJet's version of Times Roman.

Unfortunately, the Publish Pac software supports only one of the typefaces used by the Apple LaserWriter, the Courier font in 10- and 12-point sizes. If you want to scan documents printed in Times Roman, Helvetica, any of the other built-in LaserWriter Plus fonts or the dozens of downloadable PostScript fonts, DEST can't solve your problem. Version 2.0 of the software, due out with the company's new gray-scale models, won't do any better in this regard.

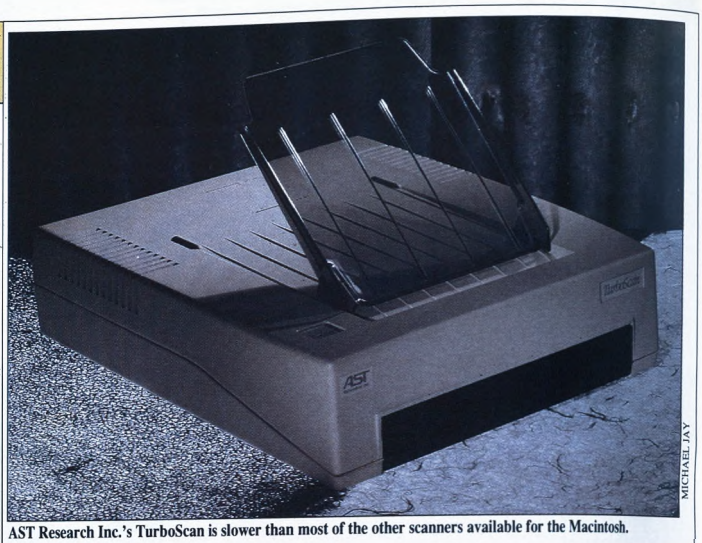
Documents containing more than one of the supported typefaces can be scanned in a single pass without difficulty. Some bold styles are supported; italics are not. Publish Pac had no problems with the mono-spaced faces in our

See DEST, Page 38

Only DEST's PC Scan Plus scanner and Publish Pac software now offer OCR capabilities for the Mac.



MICHAEL JAY



MICHAEL JAY

AST Research Inc.'s TurboScan is slower than most of the other scanners available for the Macintosh.

TurboScan

AST Research Inc.
2332 McGaw St.
Irvine, Calif. 92714
(714) 553-0340
Retail price: **$1,899 (including software and cables).**
Strengths: Numerous image-scanning options; full set of bit-map editing tools; relatively inexpensive; multiple windows.
Weaknesses: Serial port interface makes scanning slow; lacks OCR or gray-scale capabilities; some quirks in the software.

BY HENRY BORTMAN
Special to MacWEEK

TurboScan, AST Research Inc.'s 300-dpi scanner is significantly slower than most of the other scanners available for the Macintosh — it uses a serial interface rather than the faster SCSI port. Although the SuperScan software bundled with it has some distinguishing features, we also found some bugs.

TurboScan is a one-bit scanner, meaning that for each pixel in the scanned image only one intensity level can be recorded: white or black. Thus, it is well-suited to scanning images for printing on medium-resolution printers, such as the 300-dpi Apple LaserWriter, but it cannot take advantage of the additional resolution available on devices such as the Linotronic from Linotype Corp. of Dayton, Ohio, which offers resolution of 1,270 or 2,540 dpi. We found its image quality acceptable, but it had a little too much contrast compared with output from other packages.

TurboScan's lack of speed is a serious drawback. The scanning engine is the Microtek 300, which was among the earliest scanning devices marketed for use with the Macintosh. It's a reliable workhorse, but by no means a racehorse. An 8.5- by- 11-inch page takes about four minutes to scan at 300 dpi; a page of the same size will be scanned in 12 to 20 seconds with scanners utilizing SCSI. Smaller images and lower resolutions require proportionally less time to scan.

TurboScan is a sheet-fed unit, and its feed mechanism is well-designed, making it easy to scan even small images without misalignment. Its footprint, however, is a hefty 15 inches wide by 17.5 inches long — almost as large as some flatbed scanners.

The SuperScan software provides the two basic modes common in scanning applications: line art and halftoning. Its halftone mode is particularly versatile. The user has a choice of 12 halftone "screens" that vary in coarseness, the number of gray levels they can distinguish and the screen pattern they produce. Some patterns are standard "dot" screens; others are horizontal or vertical "line" screens. Unfortunately, the screen selections do not have descriptive names (they are labeled "A" through "L"), and neither the sample patterns shown in the setup dialog nor the section of the manual on halftone patterns explains them fully. Users will have to go through a lot of trial and error to determine which screen is best for an image.

Another of SuperScan's unique features is that it permits the user to mix line and halftone modes during a single scan. For example, if the user selects halftone mode, this becomes the "background" scanning mode. Up to three rectangular windows can then be specified within this background area to be scanned in line-art mode. Thus, text and photographs that appear side by side on the same page can be scanned with maximum fidelity in a single pass.

Multiple images, virtual memory

SuperScan allows you to have several image windows open at once, making it possible to cut and paste to create a "collage" from portions of multiple images. The software also employs a virtual memory technique. Scanner software usually will not allow a user to scan an image larger than what can fit in memory. With SuperScan, however, if there is not enough RAM to contain an entire image or several images at once, excess information can be written to disk. As the user scrolls or edits an image, SuperScan swaps portions of the displayed image(s) between RAM and the disk.

This is slow, even with a fast hard disk, and is not recommended for standard operation, but it offers a flexibility that other software doesn't.

Some scanner software is designed for capturing an image, not for editing it. SuperScan, however, provides a full set of bit-map editing tools, which will be familiar to users of other paint programs. Images can be edited at 300 dpi for high-resolution refinement.

Unfortunately, we found some troublesome bugs in the software. SuperScan offers five

See AST, Page 38

MACsimum Storage!

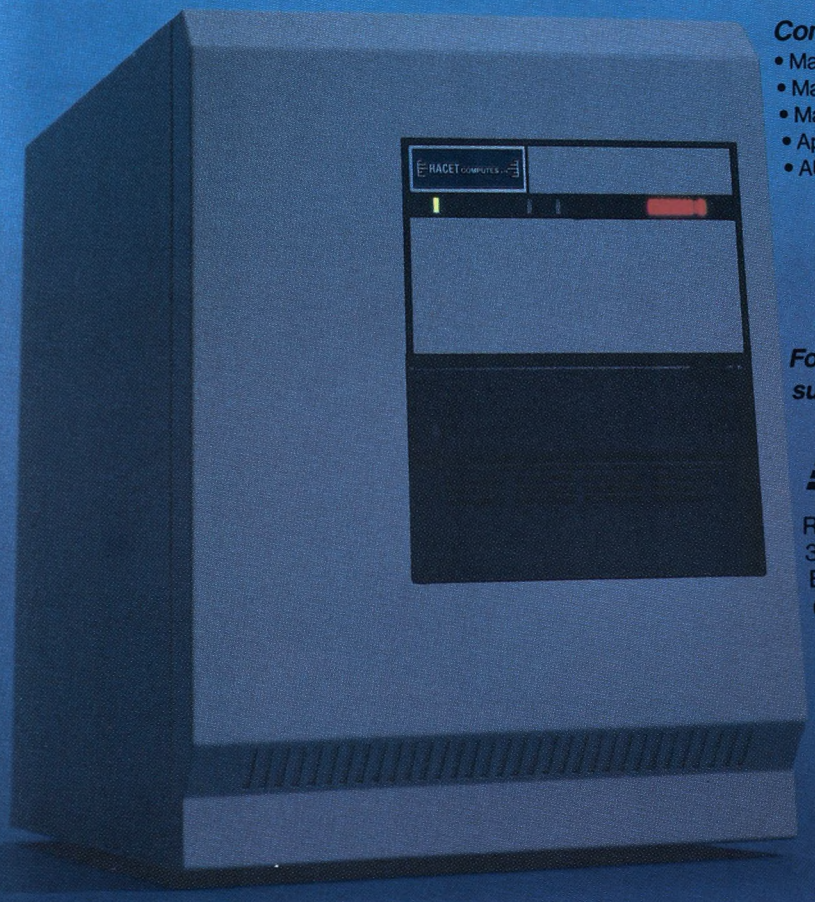
RACET computes, Ltd.,
mass storage subsystem providers to the PC marketplace since the 1970's,
now supports the Apple MACINTOSH world.

Capable

- Fastest system throughput
- Enclosure capacities up to 1 Gigabyte
- System capacities up to 14 Gigabytes
- 150 MB Tape streamer standard
- 512K RAM cache standard

Convenient

- Desktop footprint
- SCSI interface plug and play simplicity
- Complete utility software
- Automount multiple volumes on bootup
- Hard drives are easily re-addressed (SCSI ID's)



Compatible

- Mac Plus and 512E
- Mac SE
- Mac II
- Appleshare
- AUX (Apple UNIX)

For information on our PCMS™ subsystems, call

RACET

RACET computes, Ltd.
3150 East Birch Street
Brea, CA 92621
(714) 579-1725

TLX 701160 (RACET UD)
FAX (714) 579-3183
Apple Link D0411

DEST

Continued from Page 36

tests; however, it frequently dropped the spaces between words in proportionally spaced faces.

The program does not allow you to edit the scanned text within Publish Pac, but it lets you save it in ASCII or MacWrite format. (Version 2.0 will add support for Microsoft Word 3.0.) When you choose MacWrite, the program is intelligent enough to preserve much of the original formatting. Line spacing, margins, paragraph indentation, text-centering and page breaks are retained. Columnar tables are handled very well; spacing is converted to tabs.

The manual fully explains all the options, but it is rather dry reading. The documentation would be improved if it included some graphic examples.

In general, the OCR function does what it does almost flawlessly. The only problem is that what it does is only a limited set of the capabilities you might want in an OCR package. You can't, for example, teach it to read new typefaces. And the absence of support for the LaserWriter fonts is a serious limitation. Publish Pac works better for those who primarily need to scan documents produced on typewriters or PC-connected printers than for those dealing mainly with Mac-generated text.

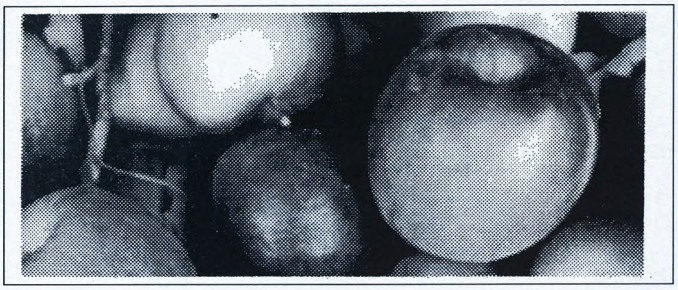
Publish Pac also will scan graphic images. In fact, although it provides only the bare minimum of image-scanning control functions and no editing tools whatsoever, we judged the quality of the halftone images produced by PC Scan Plus/Publish Pac to be head and shoulders above that of the other two scanners we tested, AST Research Inc.'s Turboscan and Abaton Technology Corp.'s C-Scan.

Publish Pac comes bundled with Silicon Beach Software's SuperPaint, which has a 300-dpi bit-map editing environment. Deneba Software's Canvas, which offers more flexible 300-dpi bit-map editing than SuperPaint, can import Publish Pac images saved in TIFF (Tag Image File Format). According to DEST, the next version will include bit-map editing tools.

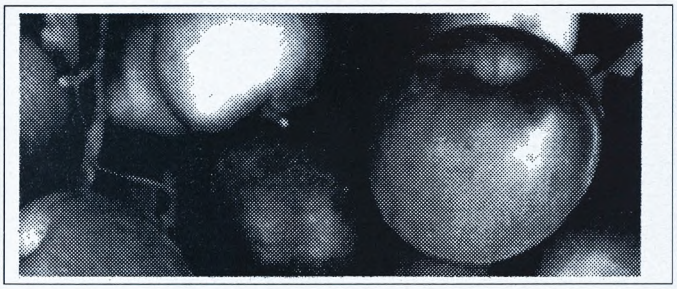
Unlike most other scanning applications, which provide a range of scanning resolutions from 75 dpi to 300 dpi, Publish Pac's lowest resolution is 200 dpi. This makes it a poor choice for scanning anything much larger than 4 inches by 5 inches for use as an Illustrator template. This limitation is compounded by the absence of a PICT or Encapsulated PostScript file format.

We recommend PC Scan Plus/Publish Pac very highly if you are looking for OCR and if the documents you need to "read" are in a typeface DEST supports. For now, DEST has set a standard in the OCR field to which Mac products from other scanner makers will have to measure up. If the new products DEST is about to unwrap live up to the quality of the unit we evaluated and add gray-scale and image-processing tools — all at a lower price — they will be well worth waiting for. ■

Scanned with DEST's PC Scan 651 with Publish Pac 1.11.

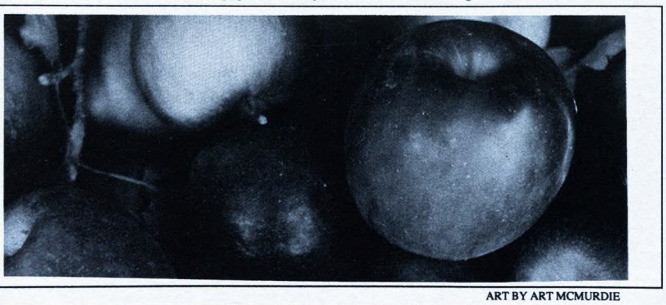


Scanned with AST Research's Turboscan with SuperScan software.



Scanned with Abaton Technology's C-Scan 16; gray-scale normalized. This product will be reviewed next week.

For comparison, we had a halftone image professionally done from the same image.



ART BY ART MCMURDIE

AST

Continued from Page 36

views: FatBits, which magnifies the image four times; Full, the normal view; and three levels of reduction. Editing can be performed in any view. We tried reducing an image down to one-quarter of its scanned size and filling an enclosed area with the Paint Bucket. The fill worked correctly, but when we zoomed to the normal view, the resolution of the entire image had degraded dramatically. The image had to be scanned again to correct the problem.

When we called customer support to inquire about this problem, the technician who spoke with us was perfectly friendly but had no explanation. He agreed to investigate only when pushed to do so, and he never called back.

The documentation, on the other hand, is generally very well done. Setup, which takes about five minutes, is explained fully, as is the use of the hardware and software, and the manual is very well illustrated.

One other idiosyncrasy in SuperScan bears mentioning. The Print dialog is non-standard. It requires that you type the name of your printer into a text field. The default is supposed to be "LaserWriter," but the copy we tested displayed "1.2.3.4.5.6.7.8.9.0.-1.-2" instead. This seems an unnecessary annoyance at best.

In addition to AST's proprietary format, SuperScan saves files in TIFF, MacPaint and PostScript formats. Its TIFF files can be opened by Image Studio and Canvas and can be exported to PageMaker 2.0, Ready,Set,Go! 4.0 and Quark XPress 1.1.

As is the case with DEST's PC Scan Plus, SuperScan's use for creating Illustrator templates is limited by the lack of a PICT format.

At $1,695, the TurboScan/SuperScan package, including scanner, interface and software, is among the lower priced of the available units. All things considered, however, we would not recommend TurboScan to prospective scanner buyers. If AST provided better support, some of the innovative features of SuperScan might be enough to tip the scales in favor of this product. But the inadequate support combined with very poor speed performance is not sufficiently offset by SuperScan's abilities to warrant a recommendation. ■

Choosing a scanner

In the market for a scanner? Here are some of the factors you ought to consider before deciding which to buy — or whether you want to wait a little longer for one of the new-generation units that will be appearing this winter.

Hardware

Flatbed or sheet-fed: These are the two basic scanner types. With sheet-fed scanners, your original is pulled through the machine by pinch rollers. Sheet-fed models typically are smaller than flatbeds — and less expensive — because the optical scanning device remains fixed in place; only the paper containing the image has to move. With flatbeds, you place the image on a piece of glass as you would on an office copier. The page remains in place while the optics move.

Flatbeds have two advantages. First, they permit scanning of items you can't put through a roller mechanism, like old photographs and pages in magazines or books. Also, with sheet-fed scanners it's difficult to line up an image exactly so lines come out straight, without "jaggies." Flatbeds permit fine control over the placement of the page. Sheet-fed models, on the other hand, are easier to use when scanning multiple-page text documents.

Interface to the Mac: Most recent scanners for the Mac use the high-speed SCSI interface. Others, particularly some of the early scanning engines, connect to the Mac's modem port. These take much longer to scan an image.

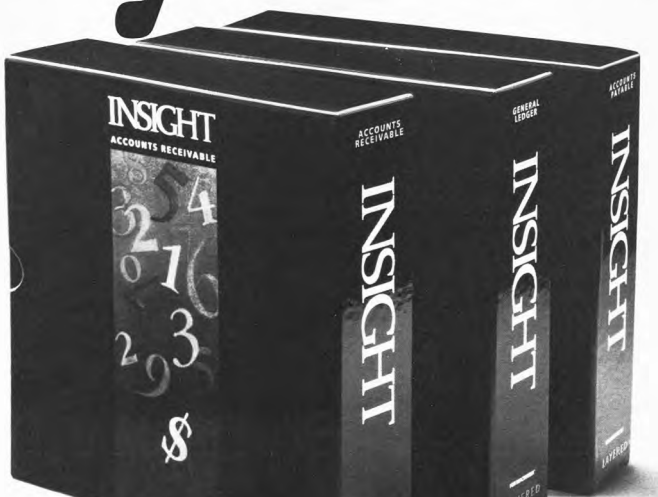
A related issue is whether a scanner has interfaces available at a reasonable cost for IBM PCs and compatibles.

Gray scale: This is the hot new item in the scanner market. DEST, Microtek and New Image Technology have announced new models that will capture four, six or eight bits of gray-scale information per pixel, which means that the scanner will distinguish and record 16, 64 or 256 different gray tones, respectively. But so far only Abaton has shipped a hardware/software combination with such capabilities.

Printed on a Linotronic, images captured with four or more bits of gray-scale information show a marked improvement in output quality compared with what has been previously available. While the technology is new

See SCANNERS, Page 42

Take $595 off your Payables.



Buy the Insight Expert Accounts Receivable/Billing module before December 31, 1987, and get the Accounts Payable module free—a $595 value.

PROMOTION VALID ONLY AT PARTICIPATING DEALERS

The best-selling accounting software in America—Insight Expert—is also the most honored.

MACWORLD WORLD CLASS AWARD 1987

MacUser EDITORS CHOICE AWARD 1986

LAYERED

HELPING SMALL BUSINESSES WIN

Recommended for all Apple® Macintosh™ computers and AppleShare.™

Apple® is a registered trademark of Apple Computer, Inc. AppleShare™ and Macintosh™ are trademarks of Apple Computer, Inc. Layered and the Layered logo are trademarks of Layered, Inc.

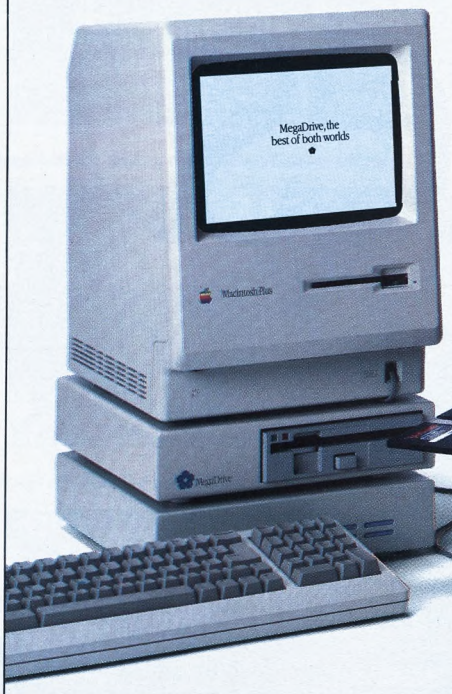
FOR MORE INFORMATION CALL: 617-242-7700

Decisions, D

Choose with confidence from Jasmine's wide range of quality, innovative products at affordable prices. From the pacesetting Direct Drive series, to the unique BackPac 40, you never compromise quality for price when you purchase a Jasmine product. Discover why MacWorld (July 1987) said "It's easy to fall in love with the quiet Jasmine drive."

MegaDrive™

Hard drive power with the freedom of a floppy.



MegaDrive™ is a high speed, SCSI storage device featuring removable, 10 megabyte, MegaFloppy™ diskettes which are much more reliable than other removable, mass storage products. Compact in size, it fits under your Macintosh or into a Macintosh carrying case.

In a word, MegaDrive™ is flexible. It has something for every Macintosh user. Accountants can put each account on its own disk and lock them away for safe keeping. Desktop publishers can put fonts, clip art, layouts and different clients on separate MegaFloppy disks. Musicians can organize their sound libraries and samplings and the average Macintosh user can finally make heads or tails of the mountains of floppy disks they've acquired over the years!

MegaDrive **$999**
($1029 Visa/MasterCard)

MegaFloppy Disks: $39.95 each ($41.15 Visa or M/C)
MegaFloppy Three-Pack: $109.95 ($113.25 Visa or M/C)*
**Three packs include handy Storage Case*

To Order Call (415) 621-4339

Remember that Jasmine saves you 40% or more.

Our prices include 30 Day Trial/Money Back Guarantee, and Full One Year Warranty.

Every drive is shipped with a technical hotline number to answer any questions. MegaDrive, Direct Drive 20, 40, 50, 80, 160, BackPac 40, Jasmine, are trademarks of Jasmine Technologies, Inc. Product specifications and prices are subject to change. Prices include 2' cable and PD software. Prices do not include shipping, CA sales tax (6.5%) or special rush handling. Apple is a registered trademark of, and Macintosh is a trademark licensed to Apple Computer, Inc.

Call for dealer and developer pricing.

s, Decisions.

DirectDrive™ Series

Hard drives that re-defined value and quality.

From the Direct Drive 20, to the revolutionary Direct Drive 80, Jasmine now offers a full spectrum of drives to meet every user's needs. Our newest addition, the Direct Drive 160, offers an incredible combination of power and speed for just $2899! The Direct Drive series is synonymous with excellent construction, no cost "extras" and high reliability. Back up software included.

20MB $649
($669.00 Visa/MasterCard)

40MB $999
($1029.00 Visa/MasterCard)

50MB $1159
($1193.00 Visa/MasterCard)

80MB $1399
($1441.00 Visa/MasterCard)

160MB $2899
($2986.00 Visa/MasterCard)

"The Jasmine Direct Drive 80 is an excellent value, offering not only outstanding price and performance, but an excellent price against the small disk market as well.* InfoWorld *highly recommends looking at this drive for your Macintosh."

– InfoWorld June 29, 1987

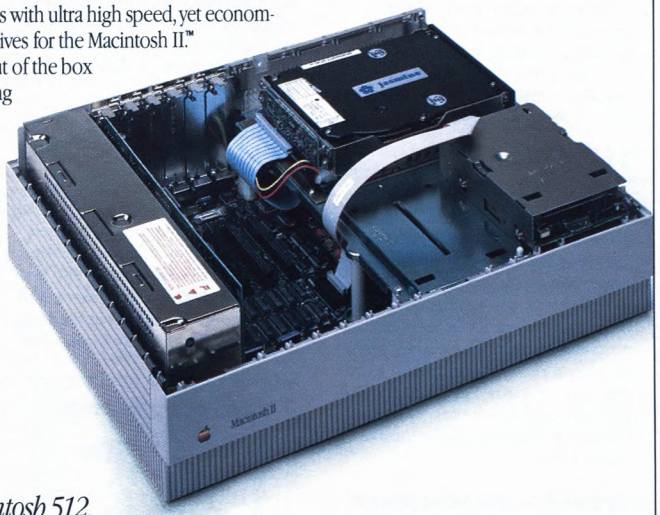
"The Drive ran flawlessly during the review period, with very good performance and no compatibility problems of any kind."

– MacWorld July 1987

InnerDrive™ Series

***New** series of internal drives for the Macintosh*

Jasmine's InnerDrive Series begins with ultra high speed, yet economically priced, internal hard disk drives for the Macintosh II.™ Pre-formatted, they work right out of the box and are very easy to install requiring no special tools or expertise. They include mounting bracket, cables and other hardware plus nine megabytes of public domain software, shareware and back-up software. Self-parking.



InnerDrive 90/II: ***$1499***
($1544.00 Visa/MasterCard)

InnerDrive 50/II: ***$999***
($1029.00 Visa/MasterCard)

JasPort

SCSI Power for the Macintosh 512.

JasPort, a Macintosh Plus compatible SCSI port for the Macintosh 512 Enhanced or 512K with ROM upgrade, permits Macintosh users to utilize Jasmine's Direct Drive, MegaDrive and other SCSI devices. User installable.

JasPort ***$129***

Jasmine Technologies, Inc.
555 De Haro Street, San Francisco, CA 94107

SCANNERS

Continued from Page 38

and remains to be proven, particularly in a production environment, magazine-quality halftones theoretically are possible from an eight-bit 300-dpi scan. The extra gray-scale information also gives you much more flexibility when scaling scanned photos to non-standard sizes or when using image-processing software such as Letraset's forthcoming Image Studio. A Macintosh II equipped with a full eight bits of video RAM can display 256 levels of gray, and the images it produces are striking.

Software

Capturing the image: Virtually all scanner software offers two scanning modes, line art and halftone. The former is for black-and-white drawings and type, the latter for photographs or other images containing a range of colors or shades of gray. Some allow both line and halftone portions of the same image to be scanned in a single pass. Most also provide a range of scanning resolutions, typically from 75 dpi to 300 dpi.

Memory can be a limitation. Historically, Mac scanner software has limited the size of an image to be scanned to what can fit into memory. Now, however, several manufacturers offer the option of scanning images directly to disk if your Mac is short on memory.

Editing capabilities: Once an image is captured, users often want to crop or otherwise edit it. Scanning applications vary widely in the editing tools they provide. Some offer a minimum of cropping functions, assuming that further editing work will be done elsewhere. Others provide a full set of paint tools and FatBits-style editing at 300 dpi. Others fall somewhere between these two options.

The ability to open multiple windows simultaneously is another feature to look for if you plan to do a lot of on-screen image editing. It is particularly valuable if you have more than the standard 1 Mbyte of RAM in your Mac. It greatly simplifies the task of creating a "collage" by cutting and pasting portions of multiple images. All three products reviewed here have this capacity.

File formats: Once an image is captured and edited, it must be saved. Each scanner provides its own unique format. The trouble is you can't do anything with these files except open them back up in the application that created them. If you want to export an image to a desktop publishing or graphics application, you need to save it in a more standard format. The most common and useful are Paint, PICT, TIFF (Tag Image File Format) and Encapsulated PostScript.

If you intend to use your scans as Illustrator templates, you must use PICT or Paint. If image size is a concern, make sure PICT is available — it can handle larger image sizes than Paint. TIFF has emerged as a kind of standard for transferring scanned images, especially for exporting them to desktop publishing applications. EPSF also is used for this purpose, but EPSF files take two to four times as much disk space as TIFF files and usually cannot be read back into the original scanner software for editing. PageMaker 2.0 and Ready,Set,Go! 4 already support TIFF. Vendors of other page-layout packages are scrambling to produce new versions that do so.

Optical character recognition: OCR lets a scanner "read" a page of text. A page full of typed text goes in; a MacWrite, Word or ASCII file comes out. When it works, it's a dream come true.

If anyone is handing out vaporware awards, OCR software should have a category of its own. Virtually every scanner manufacturer around has announced or hinted at imminent OCR software. Many have it up and running on IBM PCs and compatibles. For OCR capability on the Mac right now, DEST's PC Scan Plus with Publish Pac is the way to go. But within a few months there should be several competitive packages. (Olduvai Software's just-released Read-It! program is supposed to give advanced OCR capabilities to any scanner, but we have not yet tested it.)

Decisions, decisions

So how do you choose? As with any other major purchase, the first place to start is by asking yourself, "What do I want it for?" If you want gray scale now, Abaton's 300/FB is your only current option. If you can't wait for OCR, it's DEST's PC Scan Plus. But beginning this month, a parade of new four- and eight-bit models and OCR products will hit the market. If you're not prepared to live for a while with what you can buy today, or if your dealer can't assure you there will be an upgrade path to future hardware and software, you may be better off waiting. — *By Henry Bortman*

Henry Bortman writes frequently about Macintosh graphics and printing.

"Draw it again, Sam..."

A Star Is Born . . .

Introducing "Draw It Again, Sam,"™ the new object-oriented drawing program that brings flexibility and a new creative dimension to your computer graphics.

"Draw It Again, Sam" shares many of the same impressive features of other drawing programs like MacDraw™ and MacDraft!™ But "Draw It Again, Sam" is unique.

The End of "Clip Art" hassles

Only "Draw It Again, Sam" lets you create your own text and graphic libraries. With a click of an on-screen symbol or by menu selection you can access and run through limitless libraries. This revolutionary feature allows you to store and retrieve frequently used art, text, or logos. No more hunting through scrapbook files. No more repetitive drawing. And no more wasted time.

Create a Masterpiece —Layer by Layer

Layers, like transparencies, enable you to create art over a series of levels. You can group like objects together, as in an anatomical drawing or architectural blueprint. Then "peel away" layers to view certain slices of your artwork. Or view them all while working on only one — the mouse will pass over the unselected layers undisturbed. Use layers in conjunction with colors to produce spot color separation easily. Or extend one drawing into an animated series. The possibilities for engineering, commercial art and architectural design are endless!

Amazing Graphic Flexibility

"Draw It Again, Sam" is the only drawing program that uses "Quick Draw"™ drawing modes to their fullest potential. Imagine creating magnificent visual effects like pattern combinations, inversions and see-through objects. Graphic feats like these are virtually impossible with other drawing programs. And the countless colors and shapes achieved with "Draw it Again, Sam" are breathtaking.

"Draw It Again, Sam" even lets you manipulate objects limitlessly—after they're drawn! It takes full advantage of the high resolution available on many of today's printers and, being object oriented, requires far less storage room.

With Sam's limitless libraries, ten layered drawing planes and Quick-Draw drawing modes, you're on the road to stardom. To find out more, or to order your copy of this amazing new program, call (215) 644-3580 and say, "Draw It Again, Sam."

Call or write:

SOFTWARE

Aba SOFTWARE, Inc.
P.O. Box 850, Two Davis Avenue
Frazer, PA 19355-0915
(215) 644-3580

Requirements: Macintosh™ 512E, Plus, SE, or II.

Suggested Retail Price: $150
Dealer inquiries invited.

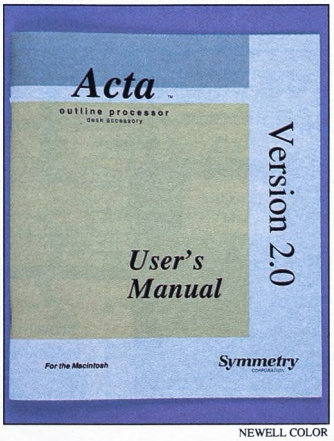
"Draw It Again, Sam" © copyright 1987 Aba Software, Inc. all rights reserved. MacDraw, Quickdraws and the Macintosh models are registered trademarks of Apple Computers, Inc. MacDraft is a registered trademark of Innovative Data Design, Inc.

Get more than an outliner with Acta

Acta 2.01

Symmetry Corp.
761 E. University Drive
Mesa, Ariz. 82503
(602) 844-2199
List price: **$59.95**
Strengths: Easy to use as outliner, list keeper or replacement Scrapbook; imposes no troublesome distinctions between headline and text; reads and writes files in many formats. Weaknesses: Sluggish when working with large or complex outlines; no automatic replace function; no multiple topic selection.

BY DAVID L. FOSTER
Special to MacWEEK



NEWELL COLOR

If you have ever said to yourself, "I wish this computer could help me get more organized," or, "Where is that graphic I made last week," then Acta belongs under the Apple menu on your Desktop. Designed to create and work with outlines, Acta also performs functions you may not ordinarily associate with outlines. It's not only a handy place to jot down and organize ideas, it's also a scrapbook, planner, appointment book, help file and mini database.

Building an outline with Acta is a breeze. Just open a document and start typing. Your text flows into a frame with a black triangle at the far left. Other outline processors limit the length of headlines to one line, requiring you to open special windows for longer text entries or graphics. Acta makes no such distinction; you can type as much as you like into a topic (up to 32 Kbytes) because your text will wrap to the next line automatically.

When you map an argument and your ideas start to turn into phrases and sentences, you don't have to break your train of thought to create a new window for them — simply type along. If long topics make it difficult to view or manipulate an outline, an Option-click will temporarily shrink them to one line. Keyboard commands also make it easy to break a single topic into several parallel or subordinate entries.

As in a traditional outline, topics can be created at various levels. On the standard Mac screen you can fit about 30 — more than enough for most purposes. The size, font and style of text entered in each topic can be specified, but you cannot make bold or underline single words or phrases within a topic.

Using either the mouse or various Command-key combinations, you can easily move topics to reorganize your outline. Subtopics within a topic can be sorted numerically or alphabetically, and whenever a parent topic is repositioned, its subtopics accompany it.

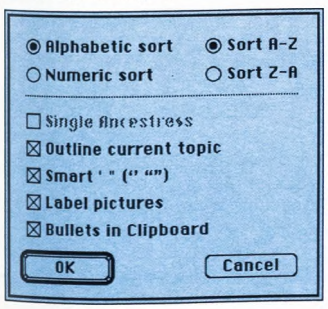
Acta has a Find feature that can locate a character sequence anywhere in an outline, but it cannot replace text automatically once it's found. Furthermore, there is no wild-card character or pattern searching capability.

Because graphics can be placed subordinately to text, Acta makes a much better Scrapbook than Apple's original. You can see screen-size pictures in their entirety. And by entering keywords to identify the image, you can find it fast with the Search command.

While previous versions of Acta could open only one window at a time, Version 2.0 lets you see up to four outlines in separate windows simultaneously. You can cut and paste words, phrases or topics (with their subordinates) from one outline to another. (Programmer David Dunham will make it possible to act on more than one topic — even non-contiguous topics — in one operation.)

With Acta's powerful Print command, you can specify the number of levels to label and print, the symbols or characters to denote topics at different levels, whether you want an identifying header on each page, and whether you want to print only the current topic or the entire outline (Unlike Living Videotext's MORE, Acta doesn't expect you to move your cursor to the home headline every time you want to print a complete document.)

Acta 2.0's Options dialog box.



Performance

Acta performs very well on Macs with 68020 processors, but it sometimes bogs down on older machines. On a Plus, just opening a large Acta outline can tax one's patience. A text-only, 78-Kbyte outline took 18 seconds to load on a Mac Plus equipped with a DataFrame 20 hard disk. Complex outlines can take much longer to load. If an outline contains long tracts of text, scrolling is noticeably sluggish, sometimes even glacial. If large topics are shortened and collapsed, however, scrolling is much faster. Acta's search feature is not a speedster either; it took 30 seconds to locate a unique word located at the end of our test outline.

On Mac IIs or with Macs equipped with accelerator boards, however, these operations were two to three times faster.

Sharing files

Acta not only works side by side with other applications, it's also uniquely capable of dealing with files in their formats. It can now read or write files in MORE, ThinkTank and Scrapbook formats. Moreover, outlines created by Acta can be saved as MacWrite, WriteNow, RTF (for transfer to Microsoft Word 3.0) and ASCII files. Remember that type styles or graphics may be lost when Acta saves an outline in some of these formats, such as ASCII.

Conversion to and from different formats are accomplished with small files called format drivers that are stored in the System folder. You choose the type of file you want to open or save to by selecting from a scrolling icon list in the Open and Save As dialog boxes. If you don't need a particular conversion capability, you can dispose of the corresponding driver. This modular approach makes sense, particularly since Acta, at 65 Kbytes, is already a rather large Desk Accessory. Acta's publisher is encouraging other programmers to write additional drivers, so other conversion options can be expected.

Acta's ability to share outlines with MORE makes them a dynamic duo. (Living Videotext now bundles Acta with MORE.) Users of MORE always have Acta available to jot down spontaneous ideas or to sketch an outline or list when using another application. Later, outlines created with Acta can be enhanced using MORE's formatting and charting capabilities. Conversely, name and address files, to-do lists, schedules and other documents created in MORE can be opened with Acta when you need access to the data while using another application. MORE files do lose a little if you open and then resave them from Acta: Cloning is cut off and styling of individual words or phrases disappears.

The MORE/Acta package also provides a convenient learning path. Users initially overwhelmed by all the capabilities of MORE will find Acta an easy way to get started with outlines. On the other hand, we know more than a few people who all but abandoned MORE once they got the Acta habit.

Tailor fit

Smart Paste is another method by which data can be imported into Acta. If the Option key is depressed while you paste text into Acta, it interprets the contents of the Clipboard as if it were in Acta format. Return characters are used to demarcate topic divisions, and lines beginning with a tab or at least five spaces are indented. This feature works with properly formatted text from a word processor or text editor, or with selections copied from other outliner programs like Borland International's Outlook or Voila!

Acta can be customized easily to fit your work habits or needs. The Options command (located at the very bottom of a menu so long it has to scroll on a traditional Mac screen) lets you configure a particular document. With a separate program called Configure Acta, you can make your settings into defaults for future outlines. Among the options is one to instruct Acta to use typographer's quotation marks (‘ and ’, “ and ”) when you press the regular quotation mark key. The program will use an open quote after a space, tab, parenthesis or carriage return and a closed quote after other characters or punctuation.

Acta is fully compatible with the Mac II and with larger display screens. It handles the color PICT format used by the Mac II so Acta can be used to store color pictures cut or copied from other color-capable applications. In addition, the triangles denoting topics can be individually colored to denote different categories of topics or subtopics.

The difficulty you are most likely to encounter with Acta is running out of memory. Because it is more sophisticated than your typical Desk Accessory, it requires more working memory. If your Mac has less than 1 Mbyte of memory or if you frequently partition memory with utilities like Switcher, plan to delegate at least 44 Kbytes of memory in addition to the minimal requirements of applications you plan to use with Acta, and you'll be able to handle outlines of modest size without difficulty. Acta seems to work with MultiFinder 1.0.

Conclusion

Macintosh users now have plenty of choices among "idea processing" tools. As a Desk Accessory, Acta lacks many of the features of larger applications like MORE and HyperCard. Its major advantage is its ability to work side by side with any application. MultiFinder will permit the use of MORE and HyperCard together with other programs, but Acta is better suited for outlining than HyperCard, and its much lower appetite for memory makes it far more practical for most users until multi-megabyte Macs become more common. In any environment, Acta's design has some advantages over MORE's, and it's far less expensive.

Among Desk Accessories, QuickDEX is speedier for handling names and phone numbers, and Affinity Microsystems' new AffiniFile has some convenient features for structured documents like help files. But nothing else has the flexibility and versatility of Acta.

Acta's performance on 68000-based Macs is barely adequate. If memory is low or if the outline is large or complex, oper-ations can become sluggish. Performance on 68020-equipped Macs is much more responsive, but such systems comprise only a fraction of Acta's intended market.

In other respects, however, Acta is an outstanding program, an example of Macintosh programming at its best. ■

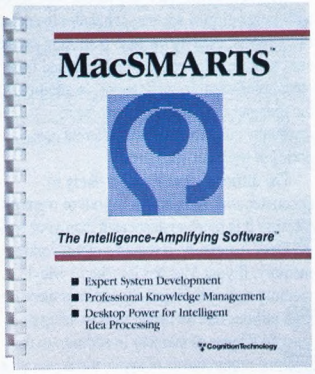
David L. Foster is a biochemist at Genentech Inc., a biotechnology company located in South San Francisco, Calif.

FOR THE RECORD

Tempo, the Macintosh macro-recording Desk Accessory, is published by Affinity Microsystems. In the Oct. 27 issue of MacWEEK, the publisher was identified correctly on Page 26, but incorrectly on Page 27. The Boulder, Colo., company is now shipping Version 1.2 of Tempo.

Expert system manages knowledge

MacSMARTS gives you the power to communicate and manage your most important strategic resource: Knowledge.



- For training: Help your new hands perform like old pros.
- For problem solving: Save time with an intelligent guide to solutions.
- For automating complex procedures: Achieve consistent peak performance.

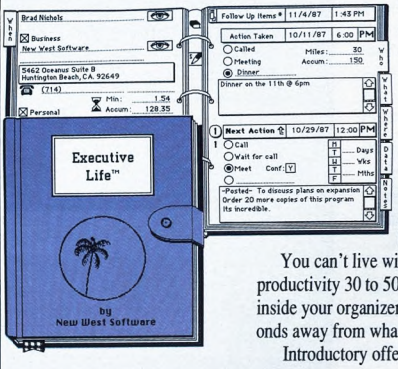
Join ARCO, DuPont, GTE government agencies on four continents and hundreds of professionals in putting MacSMARTS to work.

MacSMARTS: $149.95.

Call (800) 622-2829 (in Massachusetts, call (617) 492-0246), to find out how MacSMARTS can sharpen your competitive edge.

Cognition Technology Corp.
55 Wheeler St.
Cambridge, Mass. 02138

The ultimate task/time organizer



New! For HyperCard:

- Hyper organizer
- Hyper companion
- Hyper partner
- Hyper productive
- Hyper connected

Executive Life manges your informational "life" electronically in the same way you do each day manually. In your private life, it's your companion. In your business life, it's your partner.

You can't live without it; Executive Life increases your productivity 30 to 50 percent. By connecting information inside your organizer, Executive Life is never more than seconds away from what you want to know.

Introductory offer: Only $49.95.

New West Software, 5462 Oceanus, Suite B, Huntington Beach, Calif. 92649 (714) 898-1039

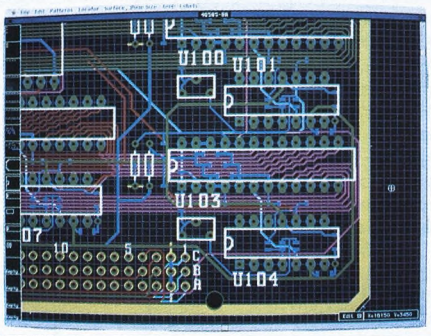
New, fully-integrated CAD/CAM

Schematic capture, layout and autorouter make the Douglas CAD/CAM professional system the first fully-integrated printed circuit board design and manufacturing package for the Macintosh.

The software supports the Macintosh II, color and unlimited multilayers. Maximum layout size is 32 inches by 32 inches. Output is to printers, pen plotters and photoplotters.

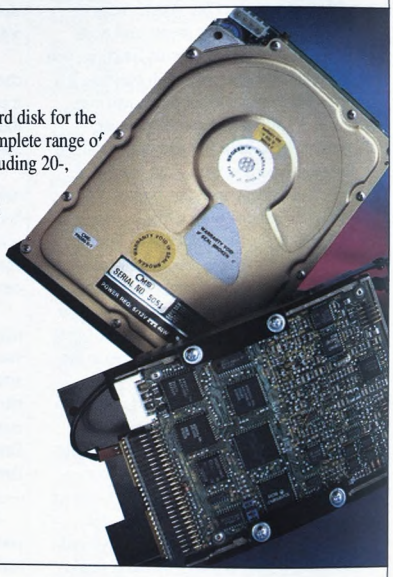
Layout - $1500. Schematic capture (including digital simulation) - $700. Autorouter - $700. Full-featured demo disks are available for $25.

For more information and to place your order, contact:



Douglas Electronics
718 Marina Blvd.
San Leandro, Calif. 94577
(415) 483-8770

Raw power



PRO80-II/i — Fastest internal 80-Mbyte hard disk for the Macintosh II. The Pro Series includes a complete range of internal hard disks for the Macintosh II including 20-, 40-, 60-, 80-, 140-Mbyte systems. Features include auto park and average access as fast as 26 milliseconds.

PRO40-SE/i — Fast internal 40-Mbyte hard disk for the Macintosh SE. Auto park, 100g non-operating shock and needs only eight watts.

Complete range of external systems for the Plus, SE, II. Best price. Best performance.

Call for name of nearest dealer.

CMS Enhancements, Inc.
1372 Valencia Ave.
Tustin, Calif. 92680
(714) 259-9555

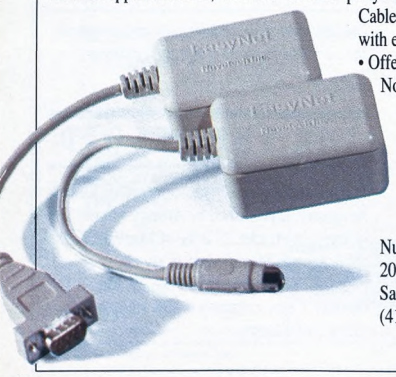
The EasyNet advantage

The EasyNet System allows you to create a full-speed AppleTalk network that:

• Has the convenience and flexibility of using ordinary telephone wire and positive locking RJ11 modular connectors. • Dramatically reduces the wiring cost of installing a local area network, in most cases running through existing wiring in your office or home. • Allows you to build AppleTalk networks up to five times the length of Apple's — up to 5,000 feet. • Is compatible with all Apple hardware, software and third-party AppleTalk products. Special EasyNet Adaptor Cable allows combination of EasyNet connectors with existing AppleTalk network connectors.

- Offers new dealers a special during the month of November. Call for more information.

To inquire about a dealer near you, or for more information, call or write today.



Nuvotech, Inc.
2015 Bridgeway, Suite 204
Sausalito, Calif. 94965
(415) 331-7815

Disk organizer/ribbon inker

Cost-effective disk organizers save time and space. Sturdy 200-pound test E-flute, dividers, lid. High gloss white or wood grain satin finish.
100 3.5" disk organizer $7.45, 4/$24.95.
50 3.5" disk organizer $4.45, 4/$14.95.
100 5.25" disk organizer $5.45, 4/$19.95.

Don't throw away expensive ribbons when you can ink them again and again for just pennies each time! You'll love the savings — and the printing quality.
FREE 4-ounce black ink lasts 50-100 re-inkings.
ImageWriter Printer Inker Kit $49.00.
Epson Printer Inker Kit $52.95

Order by phone with MasterCard or Visa
800-772-4536. In Ohio, 216-631-4214
Bede Tech, 8327 Clinton Road, Cleveland, Ohio 44144

LaserPerfect typography

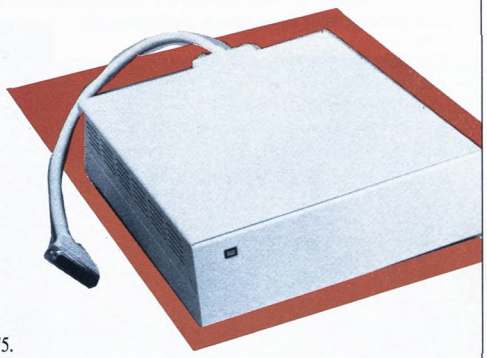
Distinctive downloadable fonts, scalable to any size. Foreign, specialized and fine typography for PostScript printers.

Shown:
1/MacSlab 2/Ambo italic
3/Garajon 4/OCR-A
5/Benares 6/Ambo
7/Phonetique 8/Norfolk
9/Hebrew

Call or write for free brochure and samples:
NeoScribe International
P.O. Box 633
East Haven, Conn. 06512
(203) 467-9880

Rodime 20 Mbyte hard drive: $499

MacProducts USA
1-800-MAC-DISK
Visa, MasterCard, COD, POs and checks accepted. Prices are subject to change and items are subject to availability.



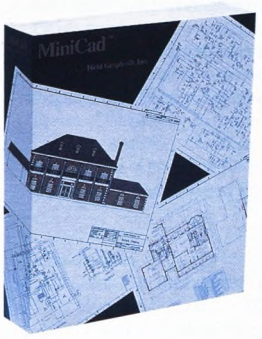
MacProducts USA
9709 Brown Lane
Austin, Texas 78754

National: Call 1-800-622-3475.
Texas: Call 1-800-2MAC-TEX.

Minicad 2-D/3-D, Version 3.0: $495

Minicad's Mac-designed interface combines ease-of-use with powerful high-precision CAD capabilities. Minicad has nine decimal-place precision, 40 color layers, eight line types, symbol library, double line tool, fillets, rotating text, auto-dimensioning and auto-alignment, MacDraw, clipboard and Mac II compatibility, total integration of 2-D and 3-D files plus more. Even without 3-D, Minicad's still an extremely powerful desktop tool — your best buy for the money. Demo $19.00.

IGES translator available.



Diehl Graphsoft, Inc.
8370 Court Ave., Suite 202
Ellicott City, Md. 21043
(301) 461-9488

ProViz captures video images

The excitement and power of real-world images can now be added to your desktop publications with Pixelogic's new ProViz video digitizer. ProViz is the first high-resolution, real-time digitizer for the Macintosh Plus, SE and II and can produce screened halftones from either flat copy or any standard video source: camcorders, VCRs or even broadcast TV.

Simple to operate, ProViz is a SCSI peripheral device that "frame grabs" images for use with all leading page-composition software packages. ProViz also works with Apple's HyperCard.

ProViz is available immediately and retails for $1,595.

For further information call (617) 438-5520.

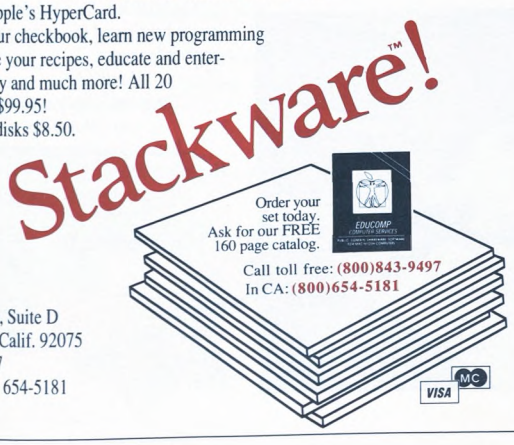
15 Mbytes of Stackware

Whether you're a business person, publisher, student, parent or hacker, there's something for you in the EDUCOMP StackPak!

You'll receive 20 double-sided disks filled to the brim with "stacks" for Apple's HyperCard.

Balance your checkbook, learn new programming techniques, file your recipes, educate and entertain your family and much more! All 20 disks are only $99.95!

Individual disks $8.50.

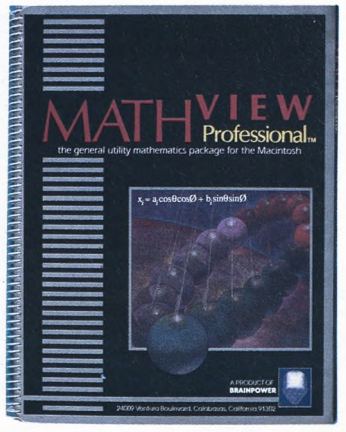


EDUCOMP
Dept. A
742 Genevieve, Suite D
Solana Beach, Calif. 92075
(800) 843-9497
In Calif.: (800) 654-5181

Powerhouse for math professionals

Speed and accuracy accent this stand-alone package for those who use math every day.

MathView Professional delivers tremendous computational and graphic power in a wide range of mathematics, including two- and three-dimensional graphing and plotting; matrices; algebraic systems; integration; differentiation; partial differentiation; complex roots and powers; fast Fourier transforms; statistics; function evaluation; and more!



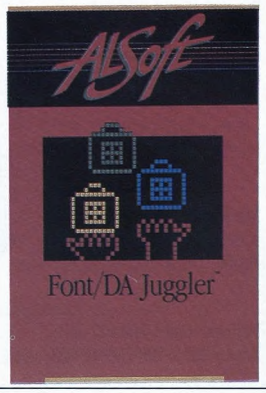
BrainPower, Inc.
24009 Ventura Blvd., Suite 250
Calabasas, Calif. 91302
(818) 884-6911

Break the barrier

Use more than 15 desk accessories (DAs) and 10 FKeys with Font/DA Juggler 2.0: the third generation Font, DA, and FKey utility! Have all of your DAs available from the apple menu at one time. Access fonts, DAs, and FKeys without having to install them in the System file. There is no better utility of this kind. A few of its unique features are:

- 100% Multi-Finder compatibility.
- Compresses fonts to save an average of almost 40 percent of disk space.
- Makes all FKeys available at once with no numbering conflicts.

Font/DA Juggler 2.0 is only $49.95.



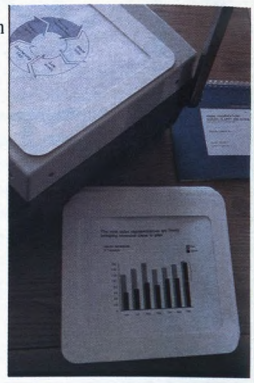
ALSoft, Inc.
P.O. Box 927
Spring, Texas 77383-0927
(713) 353-4090

Top-quality presentation standard

The Visual Presentations Standard (ViP) is the professional design standard adopted by top management consulting firms and corporations to produce clear and consistent business presentations.

ViP incorporates well-tried principles of presentation design, creation, production and delivery. Applied to comprehensive libraries of charts and illustrations, the high speed ViP system integrates all the tools you need to establish and maintain professional quality standards for presentations produced throughout your organization.

ViP runs on the Macintosh Plus and SE, and is priced at $6,250 for a single unit (volume discounts available). Call today.



Thought Leaders, Inc.
300 Broad Street
Stamford, Conn. 06901
(203) 357-9701

Professional CAD/CAM for Mac

MGMStation is a full-featured, computer-aided design and manufacturing software tool that enables even novice users to produce high-quality drawings without prior computer experience. Experienced draftsmen will find that MGMStation's uniquely enhanced interface adds unsurpassed versatility. Industry leaders are already calling it "the most easy-to-use, powerful and cost-effective small computer design and drafting system on the market." (C. Walters, Design Edge)

MGMStation is now available for $799 (suggested retail). Computer aided manufacturing software is available as well. For further information, contact:
Micro CAD/CAM, Inc.
5900 Sepulveda Blvd.
Van Nuys, Calif. 91411
(818) 376-0008

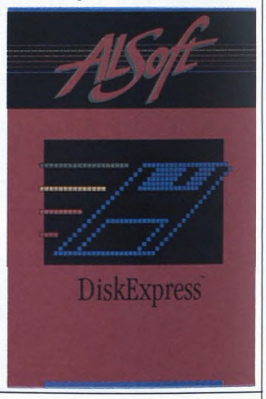
Run at top speed

DiskExpress will restore your disk to optimum performance. It eliminates disk fragmentation: the reason disks slow down.

No Macintosh user should be without DiskExpress. A few of its unique features are:

- Complete optimization of disk: files, directory, and free space.
- Maintains all access privileges on AppleShare file servers.
- Optimizes a disk that is 100 percent full.

DiskExpress is only $49.95.



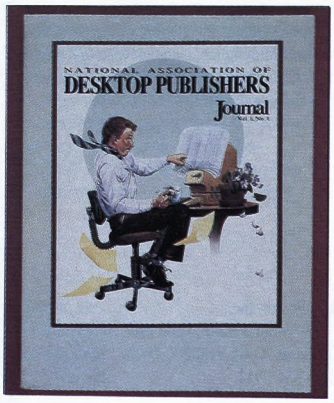
ALSoft Inc.
P.O. Box 927
Spring, Texas 77383-0927
(713) 353-4090

Join Desktop Publishers Association

Desktop publishing is changing the way people produce printed materials. The National Association of Desktop Publishers is showing people how to make the change. As an independent, non-profit association, NADTP is member oriented. Join the Association to stay abreast of this technological revolution.

Among the many attractive benefits of membership is subscription to the NADTP *Journal*. MacWEEK hailed the first issue as one that "covers some unexpected topics," and the *Boston Business Journal* said it "contains some truly enlightening articles."

For more information, write:



The National Association
of Desktop Publishers
P. O. Box 508
Kenmore Station
Boston, Mass. 02215-9998
(617) 437-6472

Instant data access

QuickDEX is a free-form database Desk Accessory. It allows you to store and retrieve information instantly while you are still working within a spreadsheet or word processor. QuickDEX comes with an autodialer and a printing utility. But don't take our word for it...

"QuickDEX is the quickest and easiest solution we have found for storing and retrieving simple information..."
MacWEEK

"...The speed is truly amazing."
Larry Magid-Los Angeles Times

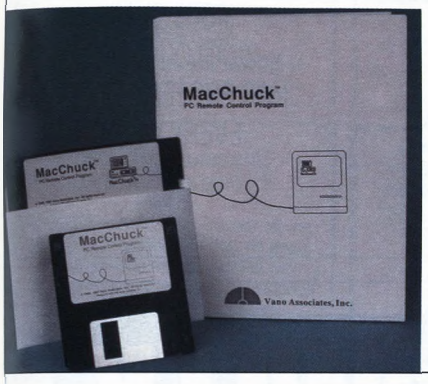
"...It uses less of my machine resources than Hypercard does."
Al Whipple-President ALSoft

All this for only $35.00!

Greene Inc.
15 Via Chualar
Monterey, CA 93940
(408) 375-0910

Put your PC into a Macintosh window

MacChuck puts your PC into a window on the Macintosh. Use MacChuck to run alphanumeric PC programs from the Mac's keyboard and screen. MacChuck lets you use Copy and Paste with PC programs or capture PC screens as MacPaint pictures. MacChuck transfers files between your Macintosh and PC at extremely high speeds. Call or write today for more information.



MacChuck program — $79.95
(Available now!)
Demo — $5.00
Universal cable — $34.95

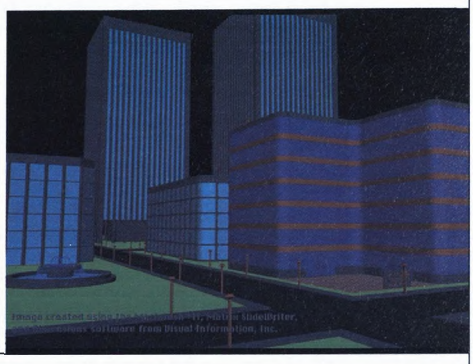
Vano Associates, Inc.
P. O. Box 12730
New Brighton, Minn. 55112
(612) 788-9547

Power 3-D CAD and presentations

Dimensions sets the standard other 3-D design and imaging systems follow.

With Design Dimensions, you have professional 3-D CAD and visualization. With Solid Dimensions, you receive superb imaging, animation, and presentation solutions. Dimension links to most Macintosh and PC 2-D drafting programs via PICT and DXF and to MSC/pal for finite element analysis.

From design and analysis to client/advertising presentations, Dimensions offers the complete CAD solution.



Visual Information, Inc.
16309 Doublegrove
La Puente, Calif. 91744
(818) 918-8834

Pictorial data base management

Business Filevision, the only pictorial database management system for your Macintosh, lets you store and work with information in pictures as well as numbers and text.

Business Filevison combines the creative features of a drawing program with the advanced capabilities of a data base program. Import scanned or digitized images created in other programs or use the powerful drawing tools provided in Business Filevision.

Call or write for a free 20-page booklet and a catalog of more than 100 public domain files developed using Filevision.

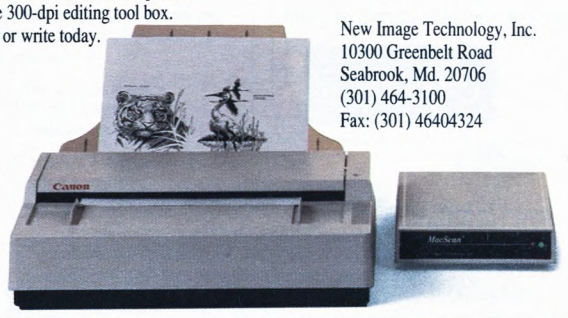
Marvelin Corp.
3420 Ocean Park Blvd., Suite 3020
Santa Monica, Calif. 90405
(213) 450-6813

The scanner you've been waiting for

You no longer have to spend $2,500 to own a high-performance page scanner. MacScan with its $1,547 list price changes that...and it's faster, smaller, and has better software, too!

- 300-dpi resolution;
- Scans entire page in less than 15 seconds;
- Saves in 10 different formats;
- Macintosh Plus, SE and II compatible;
- Complete 300-dpi editing tool box.

Please call or write today.



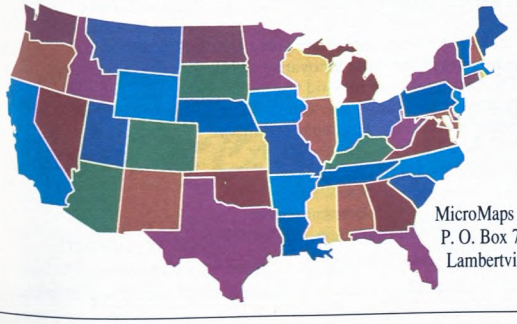
New Image Technology, Inc.
10300 Greenbelt Road
Seabrook, Md. 20706
(301) 464-3100
Fax: (301) 46404324

Put your Mac on the map

MacAtlas Professional Version is a comprehensive collection of clip-art maps that can be customized to meet the specific needs of your projects. Customized maps make attractive graphics for publications, business presentations, advertising, and educational materials.

MacAtlas Professional Version contains more than 60 maps in Draw format; the United States by state, each state by county and world regions by country. Major cities, state names and country names are included on the maps. All for only $199!

To order MacAtlas or request our free brochure, call (800) 334-4291. In New Jersey, call (609) 397-1611.



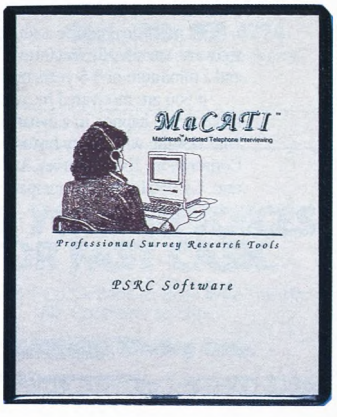
MicroMaps
P. O. Box 757
Lambertville, N.J. 08530

Market, political and social surveys

MaCATI is the most extensive computer-assisted telephone interviewing system on the Macintosh. Now available after two years in development and testing at one of the largest university survey research centers, MaCATI is the ideal tool for social and market research, political polling and some forms of telemarketing.

MaCATI handles automatic phone dialing; can be networked; handles skip patterns; maintains call records/appointments, statistics, with a 500 question limit.

$795 Editor, Utilities and two Fielders. $200 each additional Fielder.



PSRC Software
Population and Society Research Center
Bowling Green State University
Bowling Green, Ohio 43403
(419) 372-2497

MacPLUS, SE & II Owners:
SIMPLE, AFFORDABLE MEMORY UPGRADES.

MacPLUS and SE memory upgrades **must** be upgraded in sets of 2 SIMMs.
MAC II Memory upgrades **must** be done in sets of 4 SIMMs.
Simply choose between 1MB, 2.5MB or 4MB upgrades.

MAC II 1 Meg Upgrade Kit – $249
This kit will upgrade your MAC II to 2 Megabytes of memory 4 – 256K × 8 SIMMs – $249 (4@ $62.25 each)

MacPLUS and SE 2.5 Meg Upgrade Kit – $429*
This kit will upgrade your MacPLUS or SE to 2.5 Megabytes of memory 2 – 1M × 8 SIMMs – $459 (2@ $229.50 each) regular low price
***Special Rebate:** Return originally installed Apple 256K SIMMs and receive a $30 rebate (Return of 2 SIMMs).

MAC II SE and PLUS 4Meg Upgrade Kit – $839*
This kit will upgrade your MAC II, SE and Plus to 4 Megabytes of memory 4 – 1M × 8 SIMMs – $899 (4@ $224.75 each) regular low price
***Special Rebate:** Return originally installed Apple 256K SIMMs and receive a $60 rebate (Return of 4 SIMMs)

• All SIMMs are original equipment quality/120ns surface mount
• All installation instructions included for insertion into motherboard • 90 Day Warranty

GREAT AMERICAN MEMORIES
CALL 1-800-424-9378 (10AM – 11 PM EST) • VISA/MASTERCARD

Corporate Training
Macintosh/IBM PC
from
Computex, Ltd., a public corporation

We offer computer training at our headquarters, mid-town NYC, on-site, or in our Comp-U-Van (10 networked units/laser printers).

- **Executive Workshops**
- **Support Staff Training**
- **Intro. to the Mac**
- **M.S. Word/Excel/Works**
- **DoubleHelix/FileMaker**
- **PageMaker, Ready-Set-Go**
- **DOS/Ventura/WordPerfect**

— 212-661-5770 —

MOVE PRODUCT
BY REACHING
MORE THAN
40,000 QUALIFIED
MAC PROFESSIONALS
EVERY WEEK

To Place Classified Advertising In MacWEEK...

☐ Orders for classified advertising are accepted 10 working days in advance of issue date. Minimum order: Two inches (service rate $60/inch; recruitment rate $50/inch). Agency discounts not applicable. Refer to Classified Rate Card for frequency discounts. Advertisers may send camera-ready artwork or copy to be typeset by publisher at no additional charge.

☐ Call Cynde today at 415-882-7370 to place your ad.

CLARIS™

CLARIS Corporation, Apple's new software subsidiary, is seeking energetic, hands-on specialists with industry experience to expand our capability in Customer Support, Documentation/ Training and Software Quality Assurance and Test. The following positions are available:

Instructional Designer/Trainer
Instructional Technology Specialist
Project Coordinator/Course Specialist
Technical Support Specialist

All positions require a sound technical understanding of PC software, specifically Macintosh™ or Apple compatible products, and a minimum of 3-5 years of responsible experience.

If you are motivated by a fast pace and the opportunity to make things happen in a dynamic, start-up environment, send your resume with salary history and requirements to CLARIS Corporation, 20525 Mariani Ave., MS23-SS, Dept. 10-15, Cupertino, CA 95014. EOE. Principals only; no phone calls, please.

©1987 Apple Computer, Inc. Apple and the Apple logo are registered trademarks of Apple Computer, Inc.
Macintosh is a trademark licensed to Apple Computer, Inc.

MacWEEK™

MacWEEK, the fastest-growing weekly for the exciting world of Macintosh and graphic workstations, is expanding rapidly.

Special Projects Editor
Editor to coordinate special MacWEEK supplements. Responsibilities include assigning articles, working with freelance writers, copy desk and art department.

Reporter
Aggressive business reporter needed to track fast-moving industry. Computer industry experience preferred.

Editorial Assistant
Create charts. Conduct telephone research. Coordinate reviews. Learn the Macintosh. These are just some of the exciting projects you will be doing at MacWEEK. A perfect position for someone who wants to move into the publishing fast lane.

Graphic Designer
Responsibilities include designing charts and graphics, paste up and layout, working with MacWEEK's Linotronic 300. Macintosh design experience required.

Traffic/Telemarketing Coordinator
Help track our advertising. Client services responsibilities include coordination of advertising from sales to print, proofing ads, answering inquiries regarding deadlines and ad materials. In addition, you will be calling a target list of potential advertisers for Showcase and Classified Ad sections. A bonus based on performance comes with the territory. Ad agency or print media experience necessary.

Southern California Advertising Manager
We are looking for an experienced magazine salesperson to represent MacWEEK in booming Southland. The ideal candidate is aggressive and has industry contacts.

Positions include medical, dental and profit sharing benefits. You will be joining one of the most innovative publications in the country: The first weekly of its kind to produce each issue entirely with Apple Macintosh computers. At MacWEEK you will be part of a publishing revolution. Send your resumé to:

Publisher
MacWEEK
525 Brannan Street
San Francisco, CA 94107

The MIS Manager's Resource for Macintosh Professionals

Call Zigurd Mednieks
(Author of C Programming Techniques for the Macintosh)
MURSU Corporation
(617) 424-0146
25 Exeter Street, Boston, MA 02116

CompuNet Connector
LOW COST—HIGH QUALITY

AppleTalk PhoneNet™ compatible network connector. Uses standard telephone wire. No special hardware required for 3000 ft. AppleTalk networks. $24.95 retail. SCSI Cables 25-50 & 50-50 UL. $24.95 retail. Dealer inquiries welcome.
Trimar USA Inc., 236 W. 15th St., New York, NY 10011, 800/872-4454, 212/645-7008

the typefaces of desktop publishing

Virtually every PostScript font is beautifully displayed and documented in this informative HyperCard stack. For each type family, all styles and a full alphabet are shown. You will also learn the history and mood of every font, plus usage hints, technical data and vendor/pricing information!

The Typefaces of Desktop Publishing
• 800k HyperCard stack - $15.00 (REG 24.95)
Desktop Publishing Type & Graphics
• 300 page book stack is based on - $29.95
• **Stack & Book Combo** - $39.95

Publishing Resources Inc.
Boulder, Colorado (303) 442-1100
Orders: 1-800-553-1666

Practical Stackware
HyperWare Utilities Disk #1
Automated Button Mover
HFS File Boxes from your Stacks
Hypertext Field Buttons
MiniFinder
Printer Driver Customizer
Resource Copier
Script Report Generator
Shutdown XCMD
Simulated Slide Control
Sound Converter
Sound Manager
Text Importer
All on a single disk, $15.

AcmeDot Co.
P.O. Box 5923
Titusville, FL 32783
Send $5 for our Fall Catalog Stack detailing the full HyperWare line.

SALES PROFESSIONALS NEEDED
Sales professionals with experience in Macintosh, business sales and graphics/presentations needed by growing Macintosh specialty systems house. Immediate positions in the San Francisco Bay Area, possible national positions in near time frame. Send resume, salary history, your questions and three references to:

Personnel Director
2280 Bates Avenue, Suite J
Concord, CA 94520

Learn Scripting in HyperCard With
HyperTutor™
The Interactive HyperTalk Tutorial & On-Line Scripting Guide
• **Written In HyperCard**
• **Covers All Commands**
• **Includes Undocumented Features**
• **Easy and Fun to Use**
• **For Beginners & Programmers**

Send Check or MO for $49.95 + $2.50 S&H
(California Residents Add 6% Sales Tax)
teligraphics
936 Sir Francis Drake, #R
Kentfield, CA 94904
Information: (415) 454-7519

Get a **FACE-LIFT** with
Complementary Type

High quality PostScript® fonts... automatically downloadable... not copy protected. Foreign language diacritics supported. Many fonts include alternate characters. Ask about our custom logo service when you call.

13 new looks on 7 disks:

• **FATTI PATTI**
Cut Outs
VERTIGO
• Highland Gothic
H. Gothic Light
• Rouveau
Kasse
• Hobnob
Fletcher Gothic
• Peruta Light
Peruta Medium
• Calculus
MICHELLE
• Bodettes
100s of possible borders

Discount available on a set of all fonts.

Software Complement
8 Penn. Ave, Matamoras, PA 18336
(717) 491-2492, 2495

HyperCard Users
Increase Your Productivity

FREE Catalog of New HyperCard Products and Discount Software

Call 206-946-2011

HyperSource
2619 South 302nd Street
Federal Way, WA 98003

Dealer and HyperCard Developer Inquiries Welcome

We've got 'em!

Upgrade to 2.5, 4, 5 or 8 megabytes for $249 per megabyte with low-power, surface-mounted one MEG SIMMs from Turbo Technologies, Inc.

We cater to corporate buyers.
If you buy 100 SIMMs at regular price, we will send a technician to your site to install upgrades.

Call 800-542-SIMM (800-542-7466) to order today.
In New York, call (516) 625-3258.
Available NOW! NYS add 8% sales tax.
Serving Macintosh owners since 1984.
Please call for dealer pricing.

Turbo Technologies, Inc.
78 Maple Street
Roslyn Heights, NY 11577

LUCRATIVE BUSINESS OPPORTUNITY AVAILABLE

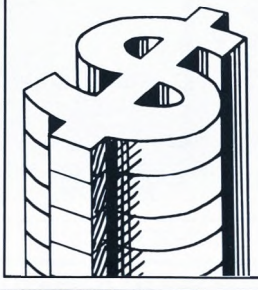
Growing multi-million dollar Macintosh specialty firm requires agents to sell products to business and individual professionals. Products are proprietary including Apple Macintosh systems and full Apple Computer authorization and service. Agency must have good business history, and experience with Macintosh technologies. Firms encouraged. Current operation of Macintosh oriented business highly desirable. Benefits include: Apple authorization for sale and service through us, training for service and support, financing plans, inventory flooring plans, proprietary products, and group financing and purchasing leverage with vendors. Send personal and business resumé, sample of advertisement, photographs of operation to:

New Business Manager
390 Grand Avenue, Suite 3
Oakland, CA 94610

Limited areas available, first respondents viewed favorably. Serious inquiries only.

DIRECTORY
OF HIGH QUALITY POSTSCRIPT® PRINTOUT SERVICES

Over 200 detailed listings of firms that output DOS or MAC files
Check or money order for $10 to:
TypeWorld
P.O. Box 170, Salem, NH 03079
No phone orders, please



SELL YOUR INVOICES FOR FAST CASH.
Cash in 24 Hours • Bank-to-Bank Wire Transfer
No Contracts to Sign
Receivable Funding Corp.
Call Mr. Forde Toll-Free 1-800-221-3136

We're Calling Your Macintosh!

MacHeaven is purchasing all types of Macintoshes, and most peripherals. Prices fluctuate daily, so call now...

(703) 528-4043

MacHeaven Awaits!

Macintosh Development

Trace, Inc. offers Macintosh software design and development by the foremost Macintosh development team in the Washington, D.C. area. Take advantage of our experience with business and industrial applications as well as systems software.

Call John Hayes at **(703) 528-8838** today to discuss how we can assist you.

Excellent references available.

THE Chip MERCHANT

1 Meg Simms
for Macintosh Plus, SE or Mac II
120 ns only **$219.00**
Video RAM for Mac II (D41264C-12)
Set of 8 for $45.00
5 year guarantee on manufacturer's defects and chip failure
Other chips available
All chips new
Prices subject to change without notice.
CALL (619) 268-4774
5797 Chesapeake Court, San Diego, CA 92123

MAC THE KNIFE

The average age of employees at Apple is less than 30, as John Sculley never tires of pointing out. That means many of them don't remember the band Paul McCartney played in before Wings. Likewise, many weren't around for the early history of the Macintosh.

But those old reels may flicker back to life if Claris can't resolve its dispute with Encore. Encore, which developed MacWrite, would like to modernize the program with hotter performance. When Apple transferred its license of the program to Claris, certain details were left in dispute. It is questionable whether Claris will be able to convince Encore to work with it. If not, we could be treated to accounts of early Macintosh history from the likes of Steve Jobs, Steve Wozniak, Randy Wigginton and others.

A juicy lawsuit is unfolding this week in San Francisco Superior Court. Ziff-Davis, publisher of PC Magazine, thinks David Bunnell of CW Communications pulled a fast one four years ago.

The snit started when Ziff-Davis bought PC Magazine without the permission or approval of Bunnell, then the editor. Bunnell responded by defecting with nearly the entire staff and launching a competing magazine, PC World, in his San Francisco apartment. Ziff-Davis didn't like the similarity in the name — or the competition.

Bunnell, who also publishes a Macintosh fortnightly, believes his magazine was sold behind his back. He and his wife have filed a countersuit. Mega-millions and some very big egos are at stake.

A bit of magic from Jasmine

Jasmine is about to change its reputation as the company with the drives having the most public domain software and the fewest hard disk utilities. The Knife hears that the company is planning to introduce hard disk-to-hard disk backup software that zips along at more than 25 Mbytes per minute. This little bit of magic is accomplished by sending the data directly to the backup drive over the SCSI port, completely bypassing the Mac. Jasmine has been keeping mum about it because another company has a competing product in the works.

General Computer's name was mentioned a couple of times this week, too, but not in connection with its hard disks. You can add HyperNet to the list of programs giving developers MultiFinder headaches. This one was such a bear that GCC's giving up on the project altogether and will recommend instead that its customers purchase TOPS, from TOPS, the most awkwardly named company in the industry. Maybe GCC's devoting all its resources to the upcoming Personal LaserPrinter Plus.

Just as SuperMac has finally straightened out its FCC troubles, the third-party monochrome monitor market is beginning to look over its collective shoulder at the communications cops. Film at 11?

Gates-aid

Poor Bill Gates. Well, maybe poor is the wrong adjective. As a former billionaire, he was one of the biggest losers in last month's Wall Street collapse. But the good news is that clever Bill has already figured out a way to recover. It's called the Excel Products and Services Directory. The idea is to compile a catalog of all third-party Excel add-ons and services. You help out by buying a listing for your Excel macro or maybe your consulting services. That's right, you buy a listing ... for $4,000. Now you know how to get rich.

That new Apple IIGS television ad featuring Operation Frog biology software in a classroom suffered a fate worse than death. In the commercial, a student dissects a frog with her computer rather than soil her hands in the grand tradition of biology class. Naturally, animal rights groups and animal researchers interpreted the ad as Apple's stand on animal rights. Not true! But Apple shrugged, anyhow, giving the ad the knife — painlessly, we hope.

Dubious tech support award: Lots of MCI Mail customers have been experiencing repeated xpc errors while trying to download their electronic mail via Desktop Express. One customer finally got fed up and called MCI's technical support for answers. The crisp, efficient support person listened to an explanation of the problem, then put the user on hold for a few minutes. When she returned, her advice was succinct: "Oh yeah, lots of people have been experiencing that problem. What you need to do is let the program rest." Right, otherwise you might wear it out.

* * *

Such a small price to pay for a MacWEEK mug — just an industry tip. Contact the Knife at (415) 882-7370 or MCI (MactheKnife). ■

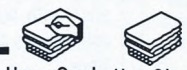
1stDESK Systems

Complete Level-4 Macintosh Data System !

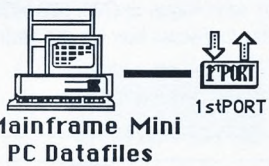
Optically scan a paper form, or draw one in MacPaint ... wait 90 seconds, the "Form" appears on the screen, type!

Keyboard Data Entry

These products support the same "generic' data entry screen. 1stGATE allows remote entry!



You can enter, retrieve, upload, and if you have 1stTEAM, even set up HyperCard to fully "automate" a complete system (one button!)



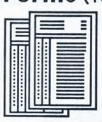
1stPORT is the key to file and data sharing within the system, and with any other brand of computer, or datafile, formatted, or unformatted, and then merge using 1stFILE or 1stTEAM! Even send the merged file back to those other computers!

Standard 1STD Fixed Record Length Datafile

The key to this whole system working relys on our unique ability to create a "1stDESK standard" datafile that ALL our products can read and write.

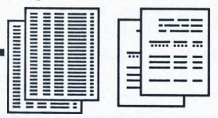
The 1STD format, being fixed record, means it's VERY FAST processing!
3000+ records/minute uploads on any Hard Drive (NOT 3000/hour)
5000+ records/minute sorts on a Mac-II in RAM

Forms (1stSCAN)



Ultimate in forms.
90 seconds to create!
Open screen "dumps"!
Laser fonts!

Reports/Lists (1stFILE, 1stTEAM)



Complex reports in minutes, not hours.
IF-THEN-ELSE logic!
Data in headings!
Fastest printing too!

Mail Merge (1stMERGE)

Customized correspondence!
Type you letter in MacWrite.
"click" three time, done!

Mailing Labels (1stFILE, 1stTEAM, 1stMERGE)

The simplest, "click only" label generator anywhere.
Fastest printing too!

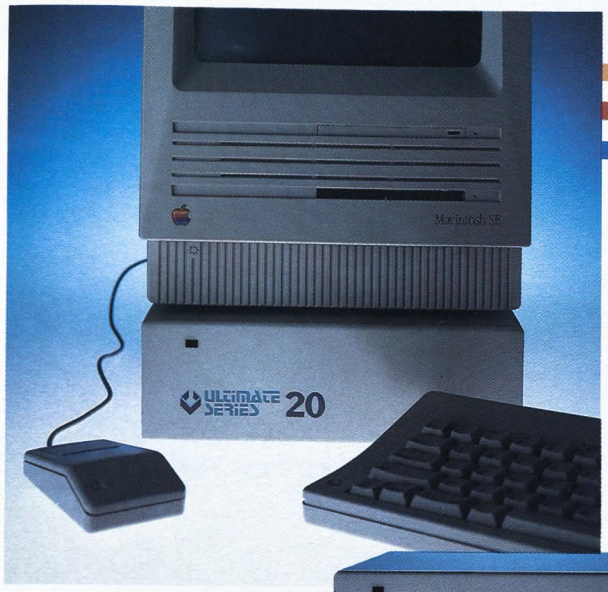
Envelopes (1stFILE, 1stTEAM, 1stMERGE)

Design a "labeling" report in minutes, even use IF-THEN-ELSE to make each one "personal"!

Mainframe/Mini/PC Datafiles (1stPORT)

Now anyone can communicate, transfer, edit, convert, and merge data from any computers ... easily!

7 Industrial Park Rd. Medway, MA 02053 617-533-2203 1-800-522-2286



Take a Bite Out of the Cost of Your Apple

20mb SCSI kit for Apple, 68MS
$645
($665 Visa/Mastercard)

$995
($1025 Visa/Mastercard)

40mb SCSI kit for Apple, 61MS

$1155
($1189 Visa/Mastercard)

50mb SCSI kit for Apple, 26MS

$1395
($1439 Visa/Mastercard)

80mb SCSI kit for Apple, 30MS

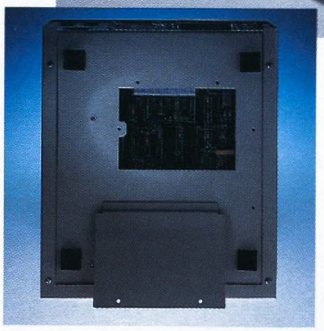
90mb SCSI kit for Apple, 18MS $1495
($1539 Visa/Mastercard)

The Ultimate Series Apple Subsystems give you fast and simple "plug and play" installation. Compatible with the Apple Mac Plus, Mac SE, and Mac II, the systems include driver and utility software, SCSI cabling, internal power supply, and all necessary hardware.

*And the Ultimate Series is the only subsystem that is **shock mounted** for ease of portability.*

Call today for complete information on the Ultimate Series Apple Subsystems . . . the most effective answer for taking a bite out of the cost of your Apple.

See us at MacWorld Expo/San Francisco
Moscone Center, Booth # 1837
January 15-17, 1988



▲ **Additional SCSI port allows daisy-chaining up to 7 SCSI devices. All controls and cable controls are clearly marked and easy to operate.**

◀ **Easy access to SCSI address select.**

MICROTEK INC.

313-591-6363

11878 Market Street
Livonia, MI 48150

DEALERS : CALL FOR PRICING

Apple, Apple Mac Plus, Mac Se, and Mac II are registered trademarks of Apple Computer, Inc.

Avatar and MacMainFrame are trademarks of Avatar Technologies Inc.
IBM is a registered trademark of International Business Machines Corporation.
Macintosh, Macintosh II and Macintosh SE are trademarks of Apple Computer Inc.

Come see us at Booth #125
MacFair • New York City
November 19–21 • The Exposition Pier • 55th St. & Hudson River

MAC MAKES OFF WITH IBM FILES

It sounded like a phony claim.

An insurance company was transferring files to IBM mainframes coast to coast and all points in between.

Without using IBM PCs.

And it wasn't just text, it was spreadsheets and documents too.

One name kept popping up – MacMainFrame.

Turns out MacMainFrame is a micro-to-mainframe link. And it had Mac uploading and downloading data to IBM mainframes before you could say 3270 connectivity.

Mac IIs and SEs were also in on the action.

They all did a pretty good imitation of a 3270 terminal to boot.

And for MacMainFrame, CICS, TSO and CMS environments seemed like the old neighborhood.

It appeared the insurance company's story was rock solid.

But was it just another 3270 connectivity solution? Hardly.

Instincts said this one had Avatar written all over it.

Avatar Technologies Inc.
99 South Street,
Hopkinton, MA 01748.

Avatar. All you need to know about 3270 connectivity.

800 289 2526
617 435 6872

Avatar®